NOVAFCSH
FACULDADE DE CIÊNCIAS SOCIAIS E HUMANAS
UNIVERSIDADE NOVA DE LISBOA

Os Indicadores Que Influenciam o Bem-Estar: Proposta de um *Dashboard* sobre a Realidade Global

Cátia Cristina Mangas Mendes Arnaut

Tese de Doutoramento em Estudos sobre a Globalização

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The Indicators which Influence Well-Being: A Dashboard Proposal for the Global Reality

Cátia Cristina Mangas Mendes Arnaut

PhD Thesis on Globalization Studies

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Tese apresentada para cumprimento dos requisitos necessários à obtenção do grau de Doutor em Estudos sobre a Globalização, realizada sob a orientação científica do Professor Luís Velez Lapão e co-orientação científica do Professor Rui Brites Correia da Silva

Researcher Declaration to Accompany the Submission of Written Work

Universidade Nova de Lisboa, Faculdade de Ciências Sociais e Humanas, Doctorate Center, Department of Political Studies

I, Cátia Cristina Mangas Mendes Arnaut, certify that I am the author of the work "The Factors which Influence Well-Being: A Dashboard Proposal for the Global Reality" I have presented for examination for the Ph.D. at the Universidade Nova de Lisboa – Faculdade de Ciencias Sociais e Humanas.

I also certify that this is solely my own original work, other than where I have clearly indicated, in this declaration and in the thesis, that it is the work of others.
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I declare that this work consists of 29.619 words.

Statement of language correction:

This thesis has been corrected for linguistic and stylistic errors. I certify that I have checked and approved all language corrections, and that these have not affected the content of this work.

Lisbon, 18th of May, 2025

DECLARAÇÕES

Declaro que esta tese é o resultado da minha investigação pessoal e independente. O seu conteúdo é original e todas as fontes consultadas estão devidamente mencionadas no texto, nas notas e na bibliografia.

Declaro ainda que tomei conhecimento do Código de Ética da Universidade NOVA de disponível na intranet e que foram respeitados os seus termos no decorrer do presente trabalho de investigação.

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Declaro que esta tese se encontra em condições de ser apreciada pelo júri a designar. Tem a concordância também do Co-orientador, Prof. Rui Brites.

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O Orientador, Professor Doutor Luís Velez Lapão,

Lisboa, 30 de Março de 2025.

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O Co-Orientador, Professor Doutor Rui Brites Correia da Silva,

Lisboa, 31 de Março de 2025.

To my biggest and only unconditional love, Fofa, and to her kids, hoping this can contribute for the building of a more just and equitable planet to live in.

To my parents, for all the support throughout my life.

"The care of human life and happiness, and not their destruction,

is the first and only legitimate object of good government."

Thomas Jefferson to the Republicans of Washington County, Maryland, 31 March 1809, *Founders Online,* National Archives, https://founders.archives.gov/documents/Jefferson/03-01-02-0088. [Original source: *The Papers of Thomas Jefferson*, Retirement Series, vol. 1, *4 March 1809 to 15 November 1809*, ed. J. Jefferson Looney. Princeton: Princeton University Press, 2004, pp. 98–99.]

"It's time to change an accounting system that counts the destruction of the planet

as if it was the production of richness"

(António Guterres, Tweet, 6 June 2022, 1:00 AM twitter)

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Undertaking a PhD while carrying on with a demanding professional life it is an exercise of sacrifice, discipline, and perseverance, which I wouldn't have carried through without the support of many. As it is mainly a lonely road one needs to pursue, I have felt throughout this journey the need to brainstorm, discuss ideas and approaches with several people, from the academia and elsewhere.

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their experience and distant outlook which were key to keep the perspective right. I feel very grateful to have them all in my life, which only happened by having embarked on this initiative.

I need to thank my daughter Laura, a.k.a Fofa, for all her support and understanding of being absent of what could have been fun weekends that I missed, and had instead to be working on the research, my parents for their support, follow up and comments, and my friends for adjusting their agendas and understanding my time constraints.

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Resumo

A globalização económica, o crescimento dos conflitos internacionais, o agravamento dos efeitos da mudança climática e o aprofundamento das iniquidades, entre outros desafios socio-económicos, estão a alimentar a necessidade de encontrar alternativas à forma como promovemos o crescimento social e o bem-estar. Têm sido apresentadas diversas propostas de medição do progresso de uma nação que corrigem o cálculo do PIB, nomeadamente medindo o bem-estar ao nível da economia de uma nação. Assim, parece relevante perceber quais são as diferentes formas de medir o bem-estar nacional e, em particular, identificar quais as variáveis que mais influenciam o bem-estar numa sociedade.

O objectivo do presente estudo é identificar os diferentes factores associados ao bem-estar societal e formas de o medir, avaliar se as diferentes formas de mensuração reflectem as mais recentes descobertas científicas nesta área de pesquisa, e identificar quais as variáveis que mais influenciam o bem-estar de uma nação.

A metodologia que utilizámos resulta da combinação da metodologia PRISMA com literatura cinzenta que nos permitiu identificar as diferentes mensurações do bem estar nacional. Com apoio da análise estatística testamos a influencia dos vários indicadores no bem-estar nacional e recolhemos as opiniões dos especialistas sobre os resultados num workshop realizado para o efeito.

Seguindo a abordagem do painel de indicadores (*dashboard*) para medir o bem-estar, utilizamos os indicadores do relatório da OCDE *How's Life* como base de construção do painel e adicionamos dimensões e indicadores que, de acordo com o enquadramento teórico, pareciam ser relevantes e estar em falta.

Constituímos uma base de dados (BD) com 142 variáveis e 15 países e identificamos, através de análise estatística, que o painel poderia ser simplificado para as 10 variáveis que

mais influenciam o bem-estar a nível nacional – 5 variáveis que influenciam positivamente o bem-estar e 5 variáveis que o influenciam negativamente – chegando desta forma a uma proposta de *dashboard*: o Well-Being Balanced Scorecard (WBBS) ou Painel de Controlo de Bem-Estar Sustentável (PCBES).

Conseguimos estabelecer um modelo de causalidade para o bem-estar que nos indicou quais os pesos de cada uma das variáveis explicativas do bem-estar. Identificámos as variáveis *Inequalities Satisfaction with Time Use – Women* e *Social Support* como aquelas que aparentemente mais peso têm para explicar o bem-estar.

Na sequência da operacionalização do índice compósito de bem-estar para todos os países da nossa base de dados, baseado nas variáveis que identificamos como mais influenciadoras para o bem-estar nacional, verificámos que os países nórdicos, que tipicamente lideram as classificações de bem-estar, aparentemente são destronados, dando espaço a que se questionem os índices de bem-estar que conhecemos hoje.

Palavras Chave: Globalização, Bem-Estar, Bem-Estar Nacional, *Dashboard*, Inequidades.

Abstract

Considering economic globalization, the international conflicts increment, the worsening of climate change effects, and the deepening of inequalities, among other socio-economic challenges, the need to find out alternatives to how we shape societal growth and well-being has spurred. Many proposals to measure a nation's progress have been put forward in ways to correct or complement GDP, namely measuring a nation' well-being. Thus, it is relevant to understand the different national well-being measurements available and, most importantly, identify what are the most relevant indicators influencing societal well-being.

The methodology we've used is the result of combining PRISMA methodology with grey literature, which allowed us to identify the different national well-being measurements. Supported on statistical analysis, we tested the influence of the several identified indicators on national well-being and gathered the specialists' feedback on the achieved results over a dedicated workshop we ran for this purpose.

The objective of this study is to identify the different well-being societal factors and ways of measuring them, evaluate if the existing measurements reflect the latest scientific research, and assess which indicators influence well-being at a national level the most.

Following the dashboard approach to measure well-being we used OECD's How's Life indicators as a baseline and we've added dimensions and indicators which seemed relevant from the theoretical framework.

We've arrived at a database of 142 indicators for 15 countries and we've identified through statistical analysis that we can simplify the dashboard to 10 indicators as the most influential in terms of a nation's well-being – 5 indicators influencing well-being positively and the remaining 5 negatively influencing well-being, thus achieving a proposed dashboard: the Well-Being Balanced Scorecard (WBBS).

We were able to establish a well-being causality model which provided the weights for each of the indicators and identified the indicators *Inequalities Satisfaction with Time Use – Women* and *Social Support* as the ones which apparently carry the biggest weight in relation to well-being.

As we operationalized the composite index for all the countries in our database sample, based on the key indicators influencing well-being, we observed that the Nordic countries, traditional leaders in well-being rankings, are apparently dethroned, providing room to challenge the available well-being indexes presented thus far.

Keywords: Globalization, Well-Being, National Well-Being, Dashboard, Inequality.

Promotion and Dissemination

The work developed during the thesis production led to several dissemination activities as we list below:

- The paper "MEASURING SOCIETAL WELL-BEING: A Scoping Review" submitted to Helyon, an Elsevier journal, on the 9th of October 2024 and still under review at the time this thesis was submitted (30th of March 2025).
- Workshop under the title "Well-Being Science: From the Individual to the Organisation and to the Nations", held on the 14th of October 2024 on the Universidade Nova FCT Campus at Costa da Caparica, for which we gathered field specialists in order to present our main findings and retrieve the specialists' feedback on the achieved results.
- The article "MEASURING SOCIETAL WELL-BEING: A Framework and Dashboard to Support Public and Social Policy Prioritization" which is published in Science Open with the DOI 10.14293/PR2199.001489.v1.
- Talk on the FCT 2025 Entrepreneurship Event, regarding Mental Health, the PhD and Entrepreneurship, which took place at the Universidade Nova FCT Campus at Costa da Caparica on the 23rd of January 2025.
- SNS – ULS São José online talk on "Happiness: A Strategy to Promote Mental Health" on the 19th of March 2025.
- Contribution to the book "Rethinking Literacy in the Era of Sustainability and Artificial Intelligence" regarding Literacy for National Well-Being, with the book chapter "Redefining Societal Progress: Beyond GDP Towards Well-Being". At the time this thesis was submitted, 30th of March 2025, the book chapter was still under revision with the estimated publication date of May 2025.
- Co-authoring a book chapter for the Springer International book "Digital Environmental, Social And Governance And Digital Transformation In Organizations" under the ESG management framework and the application rate in Portugal (Leiria)

with the title “Opportunities and challenges of European Union’s Corporate Sustainability Reporting Directive (CSRD) in Portugal: the case of Leiria district”. The chapter was submitted on the 13th of October 2024 and is expected to be published in June 2025.

Other Scheduled Initiatives

- Greenfest conference, to take place on the 13th of April 2025, Centro de Congressos do Estoril, Keynote Speech on Well-Being, Environment Sustainability and Mental Health.
- Festival Mental, to take place between the 22nd and the 25th of May, Cinema São Jorge, Keynote Speech on Happiness as a Strategy for Mental Health – An Alternative Development Model.
- Book “From Capitalism to Happytalism” (sole author) estimated to be published until the end of 2025.

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Introduction

GDP growth throughout the centuries corresponded to an improvement in the living standards and conditions to its citizen's, with a spike throughout the industrial revolution period (Crafts & Mills, 2017), and especially in the 20th century when the average GDP per capita doubled in the period of 1900-1960 and again doubled in the period of 1960-2000 (Bolt, Jutta; van Zanden, 2021; Fouquet & Broadberry, 2015). This fact may well have contributed for the erroneous assumption linking GDP and well-being. GDP as an accepted measurement method and by definition has no relation with well-being (Kapoor & Debroy, 2019; Schwab et al., 2021). Although there is some relation between income and well-being, especially to the level of ensuring basic needs are met (*Maslow's Hierarchy of Needs | Simply Psychology*, n.d.; Maslow, 1943), there is also evidence of a delinking between income increments and well-being increments after a certain point (Easterlin & O'Connor, 2020; Helliwell, 2003; Myers & Diener, 1995).

The late 1960's was probably the beginning of a new strand of thought which started to question the continuous growth model as unfit to cope with global issues as environmental degradation, depletion of resources, criminality and poverty (Ahmed et al., 2022; ILO, 2018; Shorrocks et al., 2020). For instance, Kennedy stated in 1968 "[gross national product] measures everything in short except that which makes life worthwhile" (Kennedy, 1968). The 1972 Club of Rome's publication, The Limits to Growth (Meadows et al., 1972) challenges the pro-growth stand through the simulations it presents, laying the foundations for alternative macroeconomic narratives to appear. Macroeconomic narratives became divided into pro-growth approaches, no growth and degrowth (Guske et al., 2019; Jackson, 2009; Pissarskoi, 2017), under which, alternative development models are being proposed and implemented across the globe (Kothari et al., 2019).

As the world context evolved, bringing challenges such as the environmental degradation and global warming, alongside with the deepening of inequalities (Ahmed et al., 2022; ILO, 2018; Shorrocks et al., 2020), the discussion moved towards finding indicators

that could overcome GDP limitations and provide a more accurate view on the country's real performance. Key international organizations such as the UN, OECD, or the European Union have been seeking alternatives that can complement GDP shortcomings, considering the measurement of societal well-being (Aitken, 2019; Berik, 2018; Costanza et al., 2009; European Union, 2007; Hoekstra, 2022; OECD, 2018; Radermacher, 2015; Stevenson & Wolfers, 2008; J. E. . Stiglitz et al., 2018; United Nations - Economic and Social Council, 2022).

As Jefferson once stated, "the care of human life and happiness (…) is the first and only legitimate object of good government" (Jefferson, 1809), putting citizen's well-being at the centre of political decision making, which made us wonder – how can decision makers take well-being informed decisions?

We leverage from this quest, the need to understand how societal well-being can be measured, what are the indicators that influence it the most, and what should governments focus on if they want to raise their population' well-being.

More specifically, our objectives with this research will be to understand which are the factors and related indicators or dimensions which influence well-being at a national level the most, either positively or negatively, and propose a tool that can aid governments in the public and social policies selection and corresponding budget prioritization towards social well-being.

In a context in which happiness and well-being has become a "global multibillionaire industry" (Cabanas & Illouz, 2019, p. 26) with different proposals on how to attain it, an independent scientific outlook on what well-being entails becomes necessary. It has become a global concept. We see a trend in adopting well-being as a key reference to measure a country's performance, following Bhutan's example, such as New Zealand and Scotland, but also downscaled city size pilots being implemented in several cities such as

Amsterdam[1] (Raworth, Kate; Krestyaninova, Olya; Eriksson, Fredrik; Feibusch, Lucy; Sanz, 2020), Philadelphia, Portland (Doughnut Economics Action Labs, n.d.) and Cornwall (Turner et al., 2020). It is thus fundamental to have a common framework which allows for overall applicability to infer well-being levels, and hopefully as well a supporting guiding tool to drive nation-wide policies aimed at increasing citizen' well-being.

Parallel trends aiming to increase populations' well-being are also being proposed and piloted in some regions in the world. 4 Day weeks are being piloted in different countries (Iceland, Spain, Portugal, New Zealand or the UAE) and industries (IT, Pharma and Human Resources) (Lockhart, 2021; XXIII Governo da Republica Portuguesa - Ministério do Trabalho Solidariedade e Segurança Social, 2023) and the unconditional basic income is being piloted in some regions in the world such as the United States, Finland and Norway (BIEN - Basic Income Earth Network, n.d.; Wallach, 2020).

Not knowing what are the key indicators, from a nation perspective[2], which drive well-being for the populations, the ones which influence it the most, positively or negatively, blindsight's any government to clearly set a prioritization in terms of public or social policies (Baldock et al., 2012; Dye, 2017) to increase well-being.

Hence, this study's research questions were the following:

1. What are the factors and how can well-being be measured?
2. What are the indicators that mostly influence well-being?

The problem starts with the phenomena definition itself, as the term happiness, well-being, quality of life, objective or subjective well-being are often used interchangeably, depending on the authors, on the science lens researching the topic, and the scope in which is studied – individually or from a societal perspective. We will argue that well-being should

[1] https://www.theguardian.com/world/2020/apr/08/amsterdam-doughnut-model-mend-post-coronavirus-economy , https://www.greeneuropeanjournal.eu/the-doughnut-model-for-a-fairer-greener-amsterdam/

[2] Here we consider the nation under the nation state concept (Rose, 1976; A. D. Smith, 2002)

be the prevailing concept, as it overarches the objective and subjective components, including the concepts of happiness and quality of life, hence more adequate for a national analysis, for which we will propose a definition.

Additionally, we will have to identify the factors and the indicators which better translate them, that are most relevant for societal well-being.

In order to address the problems, we will be using a method combining PRISMA methodology and a grey literature selected studies revision for the Literature Review. For the data analysis we will apply statistical analysis.

In our literature review we analyse the several concepts that are being used to translate what happiness and well-being are, and the different perspectives and scopes the different sciences studying the phenomena are adopting. We go through the importance of GDP, it is limitations and appointed criticism, and review the discussions on the need to go beyond GDP and how well-being can pose as an alternative. We discuss the challenges of identifying the factors and of measuring societal well-being and how it is correlated with individual well-being, showcasing how improvements on an individual level do not necessarily reflect at a societal level. After listing alternative country performance measurements, we narrow our focus to the measurements which consider well-being and do a comparative analysis of the available well-being dashboards, as a baseline to do a gap analysis in terms of the missing indicators suggested by the theorists, as well as the differences in terms of the indicator landscape amongst the different available dashboards.

Expanding on the comparative evaluation of current well-being dashboards and the gaps identified within them, this research seeks to assess the statistical significance of the proposed indicators. This approach aims to validate the theoretical frameworks established in the literature review by grounding them in empirical data, ultimately facilitating the creation of a practical and simplified dashboard. This points us towards the necessity of connecting theoretical insights into practical application through a statistical approach which allows us to identify and validate the indicators most significantly correlated with

well-being, bridging the operationalization of our theoretical framework into measurable outcomes and actions.

We then propose an updated dashboard, as a result of our gap analysis, and test the indicators to statistically understand their relevancy. Upon identifying the most statistically relevant indicators we will learn which are the indicators that influence well-being the most, being it positively or negatively, through a correlation analysis. This analysis will give us insights to what a simplified well-being dashboard could look like, which we will propose as a tool.

We will then pursue a Cluster Analysis with the countries in the sample, enabling us to try to understand the reasoning of the similarities within the identified groups in face of the selected indicators.

Based on the key well-being indicators we will define a well-being causality model (i.e the main factors influencing well-being). This will allow us to understand the weights each of the key indicators has in explaining well-being and it will additionally allow us to build a well-being index to rank the countries in our database (DB).

Finally, we will present our conclusions and point out potential additional research areas to be pursued in this field of study, which already comprise the specialists' feedback and inputs, gathered in the workshop we held where we presented this research results.

Based on the premise of the need to have well-being at the core of any development model, and consequently policy making, one of our arguments is that the current available well-being indexes do not comprise the most updated spectrum of what well-being entails. Performance indicators are important to be assessed, including inequality where applicable, as this will provide us an assessment on population asymmetries and/ or degree of inclusion. This evaluation is expected to gain increasing importance overtime, not just due to its intrinsic value to the social fabric of just societies, but also due to the increasing migration movement, consequence of globalization, war or political instability, and more recently climate change, and the multiculturalist (Kymlicka, 2019) challenge it poses.

In a context where the challenges of climate change and global warming question how national performance is being measured, and in which well-being models are being considered as potential alternatives, we believe this research will improve overall knowledge on what well-being is, point into the direction of the best way to measure it, and understand what are the main indicators which drive it, supporting policy makers into improving well-being for its citizens.

The target audience for this research are the governments, the political agents and researchers. The broader audiences for this research are the national statistical departments, the supra-national institutions which develop well-being related studies, and the general public. Governments and political agents will benefit from this research in the sense that this points to the indicators that can be prioritized in order to improve societies well-being, aiding in the public and social policy making to be more target focused in achieving these results. Furthermore, Governments' natural mandate is to improve their societies and citizens well-being, thus, bringing clarity to this endeavour will support in the policy making and policy prioritization. A clearer view and more targeted policies will probably provide more tangible results for the population, bring closer together governments and political agents with their electorates, and strengthen democracies.

Putting this research into practice will allow for citizens to improve overall societal well-being, contribute to the fabric of just societies, whilst keeping the country and the world within safe environmental planetary boundaries.

Chapter 1 – Methodology

1.1 Introduction

In this chapter we start by presenting the scoping review we've undertaken for this research. We then describe in detail the statistical tools we've used for the data analysis supporting our research. We finalise the chapter with the description of the main results and expert' feedback out of the workshop held in which this research was presented.

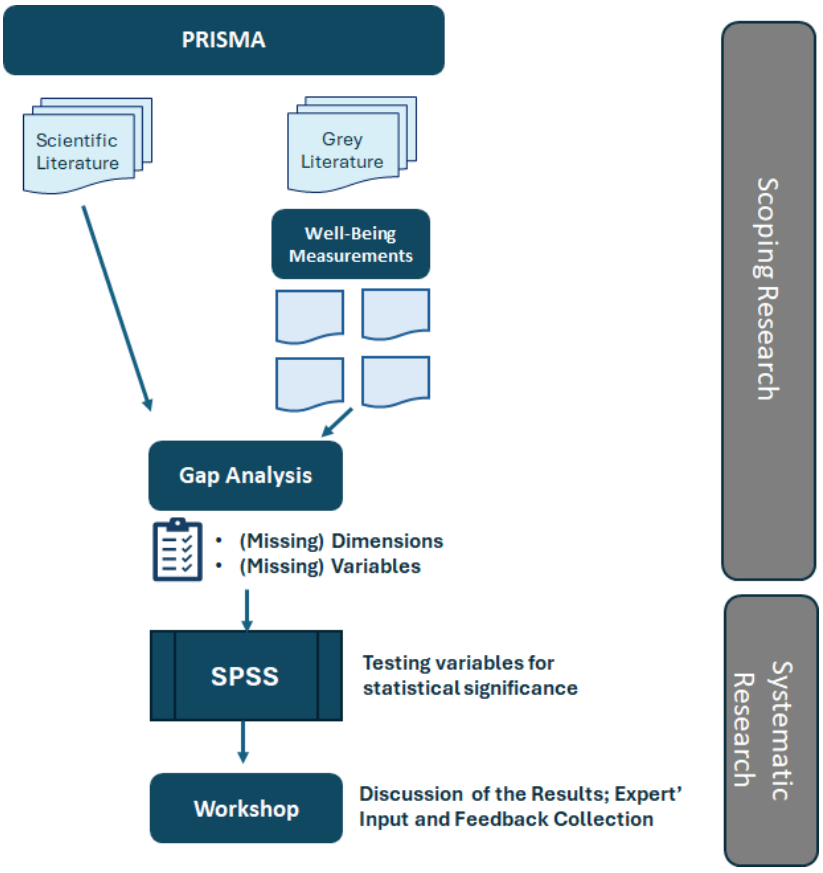

Figure 1 – Identification of Relevant Studies: Global Method

(Author's own creation)

The objective of this chapter is to provide the necessary visibility of the development and rational which ultimately guided the research and the outcomes in this document.

1.2 Scoping Review

1.2.1. Design

The present scoping review builds on the works of Arksey and O'Malley (Arksey & O'Malley, 2005), Levac and colleagues (Levac et al., 2010) and Joanna Briggs Institute (Peters et al., 2015), following the PRISMA-ScR principles (Tricco et al., 2018), specifically detailed for scoping reviews.

Furthermore, we did a cross-check between the PRISMA selected studies results and the identified relevant grey literature, which allowed us to understand, on a first level, the key GDP complimentary measurements considering well-being, and on a second level, perform a gap analysis between the literature suggested indicators and dimensions, and the ones that are in fact being applied in the measurement frameworks.

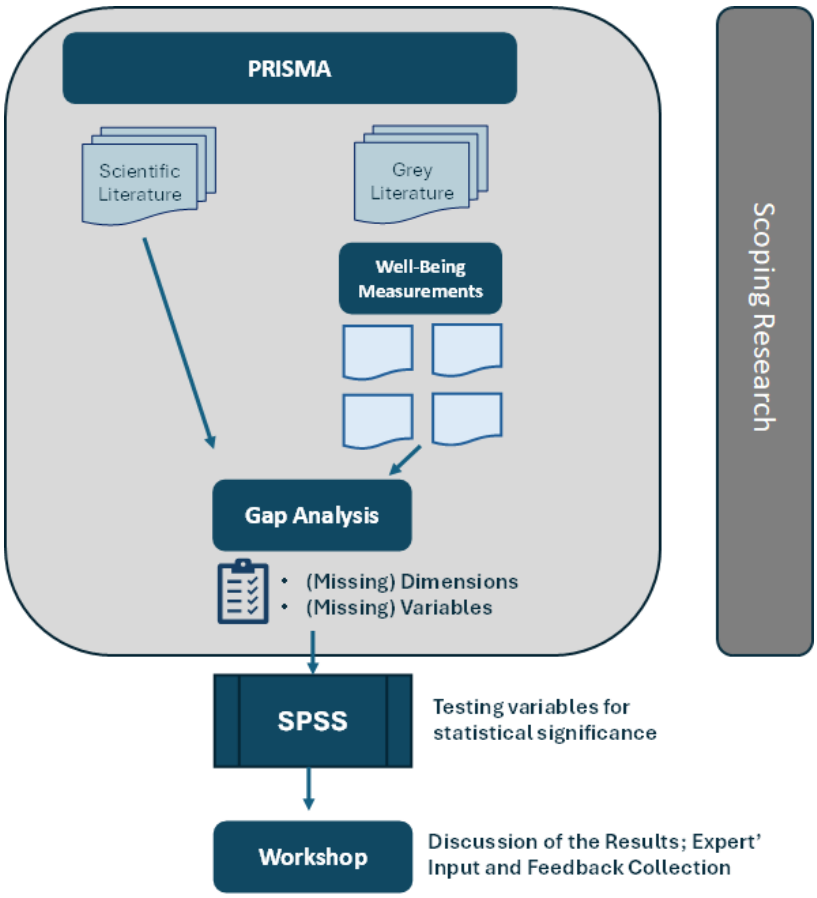

Figure 2 – Scoping Research: Applied Research Method

(Author's own creation)

Additionally, we followed the steps proposed by Silva (Silva, 2011), Mota (Mota, 2009, Chapter 4), and Dantas (Dantas, 2015) which supported the formulation of the research question, the study selection and the analysis and interpretation of results.

1.2.2. Research Questions Formulation

Following the logical-positivism and the positivist paradigm we have applied the quantitative perspective and a hypothetical-deductive methodology (Coutinho, 2014,

Chapter 1; Reichardt & Cook, 1979, pp. 210–214) to formulate our research questions. Hence, our research question is:

1. How can societal well-being be credibly measured in Europe?
2. What are the indicators / dimensions that mostly influence well-being?

1.2.3 Identification of Relevant Studies

We have used the following scientific search engines to identify relevant articles for our research: Science Direct, Scopus, Web of Science (Clarivate), Springer Link and Google Scholar. We have used ResearchGate to retrieve some of the papers. For grey literature we have obtained it from snowball method from the selected papers and from Google Scholar, several governmental reports, World Health Organisation (WHO), European Commission, European Union, Organisation for Economic Cooperation and Development (OECD), United Nations Development Programme (UNDP), The Sustainable Development Solutions Network (SDSN), United Nations, Eurofund and Eurostat.

The keywords we used for the search were “Well-Being Indexes”, “Well-Being Dashboards”, “Well-Being Indicators” and “Europe”. We’ve opted to focus on Europe as the initial searches on the scientific search engines provided too broad results that were mainly out of scope. The very few results with some proximity with the scope were country specific, covering specific regional aspects such as spirituality or the integration of native people, hence not generalizable or applicable to a vast set of countries. Moreover, the existence of comprehensive sets of data is still mainly available in the Global North countries, for which narrowing our search for the European geographies would allow us to access data from different countries and avoid narrowing our analysis to a single country (ESS - European Social Survey, 2013a, 2019; OECD, 2023b).

The peer reviewed studies, books and documents which addressed the research question and were related with the well-being concept and well-being related concepts,

GDP corrective or alternative measurements, well-being dashboards, well-being indexes were included. Government and Supra-national entities documents and reports were also included. We have applied a date filter to select documents from 2018 to 2024, as we wanted to ensure the most recent and up to date literature, in line with the data collected from the How's Life OECD database of 2018, used to test our model.

Additional filters were applied in each of the research engines:

Table 1 – Filters Applied in the Search Engines

Search Engine	**Filters Applied**
Science Direct	"Ecological economics"; "Information Sciences"; "Social Sciences"; "Psychology"; "Environmental Science"; "Economics, Econometrics and Finance"; "Neuroscience"; "Open Access"; "Review Articles"; "Research Articles"
Scopus	"Journal"; "Generic"; "Book Section"; "Frontiers in Psychology"; "Frontiers in Psychiatry"; "BMC Psychology"; "Open Access"; "Social indicators Research"; "Sustainability"; "Current Psychology"
Web of Science /Clarivate	"Open Access"; "No minimum timeframe selected"
Springer Link	"Article"; "Research Article"; "English"; "Social Sciences"; "Economics"; "Quality of Life"; "Research"; "Social Sciences, General"; "Economics, General"

We have excluded documents issued in other languages different than English or Portuguese, duplicate publications, literature reviews, and opinion-based documents.

The selection of the relevant studies followed the PRISMA steps of identification, screening, eligibility and inclusion.

1.3 Data Analysis

1.3.1 – Data Sources

As Reichardt and Cook refer, “researchers cannot benefit from the use of numbers if they do not know, in common sense terms, what the numbers mean” (Reichardt & Cook, 1979, p. 230). For this research we will be following the quantitative perspective as the research is outcome oriented and aims to be generalizable (Reichardt & Cook, 1979, p. 214), we also follow Stebbins approach “flexibility in looking for data and open-mindedness about where to find them” (Stebbins, 2011, p. 5) in our aim to find the relevant data for the research.

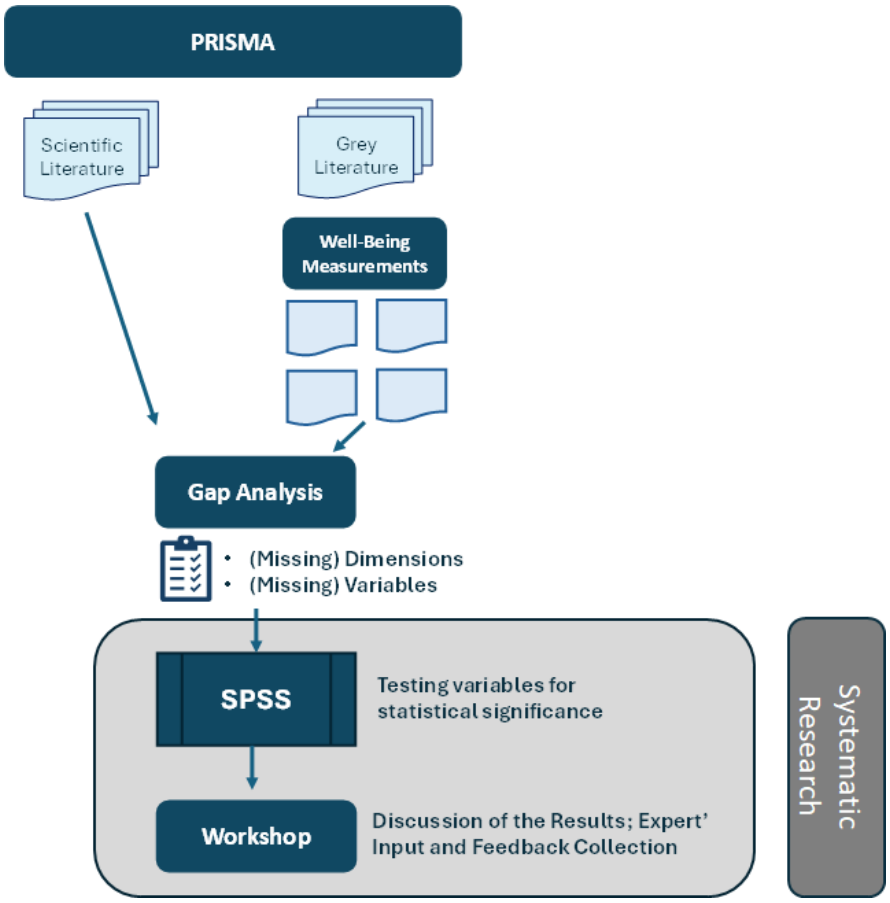

Figure 3 – Systematic Research: Applied Research Method

(Author’s own creation)

We have extracted data from the OECD How's Life Report database as our baseline database (DB). We have complemented the DB with additional indicators for which we have used different sources. A detailed table with the sources of data is provided in Appendix number 3. For the indicators we have proposed, the added indicators to the DB, the definition is provided in Appendix number 1. The dimensions definition is available in the Appendix number 2.

The DB was initially consolidated in a Microsoft Excel 365 spreadsheet that can be provided for consultation.

Once the DB was consolidated it was verified and cleaned as a significant number of indicators and countries had no data which prevented us from performing any statistical analysis. The list of indicators and countries excluded are described in the Appendix number 4.

With the final set up of the DB we imported the Excel spreadsheet into IBM Statistical Package for Social Sciences (SPSS) Statistics software version 28.0.0.0. SPSS was the selected statistical software tool for this research as it allows to relate the research questions (Coutinho, 2014, p. 194). The outputs of the analysis are provided for consultation. We additionally used Microsoft Excel 365 spreadsheets mostly for the operationalization of the dashboards and graphs elaboration.

1.3.2 Statistical Tools Applied

Following the logical-positivism and the positivist paradigm we have applied the quantitative perspective and a hypothetical-deductive methodology (Coutinho, 2014, Chapter 1; Reichardt & Cook, 1979, pp. 210–214). Data was analysed quantitatively, both for absolute and relative frequencies as well as qualitatively using the grounded theory (Coutinho, 2014, p. 387), following Silva (Silva, 2011) and Dantas (Dantas, 2015).

We consider indicators the set of observations of a single item or topic.

We consider dimensions as groups of related indicators, i.e., indicators regarding the same phenomena (Finney, 1977; Sheldon, n.d.).

We have considered context indicators / dimensions as indicators or dimensions that are related to the society context, such as Income and Wealth, Safety or Civic Engagement.

We have considered objective indicators following the literature review concept (J. E. Stiglitz et al., 2009, p. 15,16) as the ones that are quantifiable in an objective way, i.e., reliant on observable data and not dependant in any way to individual perceptions or qualitative appreciations such as the data that result out of questionnaires.

Conversely, we have considered subjective indicators following the literature review concept (J. E. Stiglitz et al., 2009, p. 43,44) as the ones that result on individual perceptions, traditionally captured through questionnaires and surveys.

We standardized the indicators, and performed a descriptive statistical analysis to all the indicators from the downsized DB. The analysis is provided in the Appendix, number 5.

We looked into the proposed indicators and evaluated how they behave in terms of ranking in our country sample.

In the present research we've used the multivariate analysis, as it allows for a simultaneous analysis of the relationship among several indicators with different categories. The Principal Component Analysis (PCA) and the Cluster Analysis fall into the multivariate analysis.

In order to address our research question number 2 we will perform the Principal Component Analysis (PCA) (Marôco, 2021, Chapter 9) in all the dimensions of our dashboard. With this analysis we aim to understand what are the key indicators in each of the dimensions that statistically explain it, allowing us to simplify not only the dashboard but also the analysis, following the same methodology as Silva (Silva, 2011, p. 199) and as

Dantas (Dantas, 2015, p. 111). The outcome will provide us the first glimpse of what a country level summary dashboard could look like.

The analysis results are presented in tables or supporting graphs and complemented by descriptive text highlighting the more relevant results and findings.
All the detailed calculations and preliminary steps which lead to the results are provided in the Appendixes.

Following the PCA analysis we will perform a correlations analysis. This analysis allows us to evaluate how the indicators contribute to explain well-being, and whether they influence positively or negatively well-being, as well as which are the ones driving the highest weights. The outcomes of the correlation analysis will allow us to provide an additional level of simplification to the dashboard.

Upon the most simplified version of the dashboard, the 2nd level streamlined dashboard, we will perform a multiple linear regression analysis, which allow us to establish a causality model for well-being and its independent indicators (Marôco, 2021, pp. 661–662; Murteira & Antunes, 2012, pp. 595–596). This analysis will also bring us insights in terms of the weights each of the independent indicators have on well-being which can aid in the budget, social and public policies prioritization. The multiple linear regression analysis operationalization provides us with a composite value for each of the countries in the DB sample, enabling us to build an index for our country sample, based on the findings of this research in terms of the determinant indicators for well-being at a national level.

We will also perform a Cluster Analysis. The cluster analysis is an exploratory analysis which allows for the grouping of subjects and/or indicators with the same homogenous characteristics (Marôco, 2021, p. 523). In this analysis the grouping is done through measures of similarity (or dissimilarity) allowing to infer that any observation belonging to a Cluster is similar to all the others belonging to the same Cluster (id.).

There are several methods to measure the differences between the elements. For the way in which the "distances" between elements of the sample are measured, the Squared Euclidean Distance was used. This metric measures the length of the line between two observations in a *p*-dimensional space (id. ibid. p. 525) and it is the one used as default in the tool – SPSS - which supported this research (id. ibid. p. 526).

For the method of grouping the sample elements into clusters, the Ward's Method was used, which allows for retaining the Clusters, among all possible clusters, with the lowest sum of squared errors and provides a clearer cluster separation.

We will use the outcome of the PCA as well as the correlations analysis to select the indicators to perform the Cluster analysis, as the results from both analyses will have identified the most statistically relevant indicators to explain well-being. This will enable us to identify trends and similarities among the countries in the sample.

The present research builds on the work of Silva (Silva, 2011), which already establishes a comparison among European countries and the positioning of Portugal in terms of subjective well-being. We expand the analysis to go beyond subjective well-being and cover objective and subjective well-being, considering as well the new evidence science has produced between then and now. Similar methodology has been applied by Mota (Mota, 2009, Chapter 4), in order to assess the importance of both objective and subjective indicators in relation to Life Satisfaction at a country level. We will be adopting the same methodology for data analysis as Silva and Dantas used (Dantas, 2015; Silva, 2011).

1.4 Methodology Applied in the Research Questions

The methodology was applied according to each of the research questions:

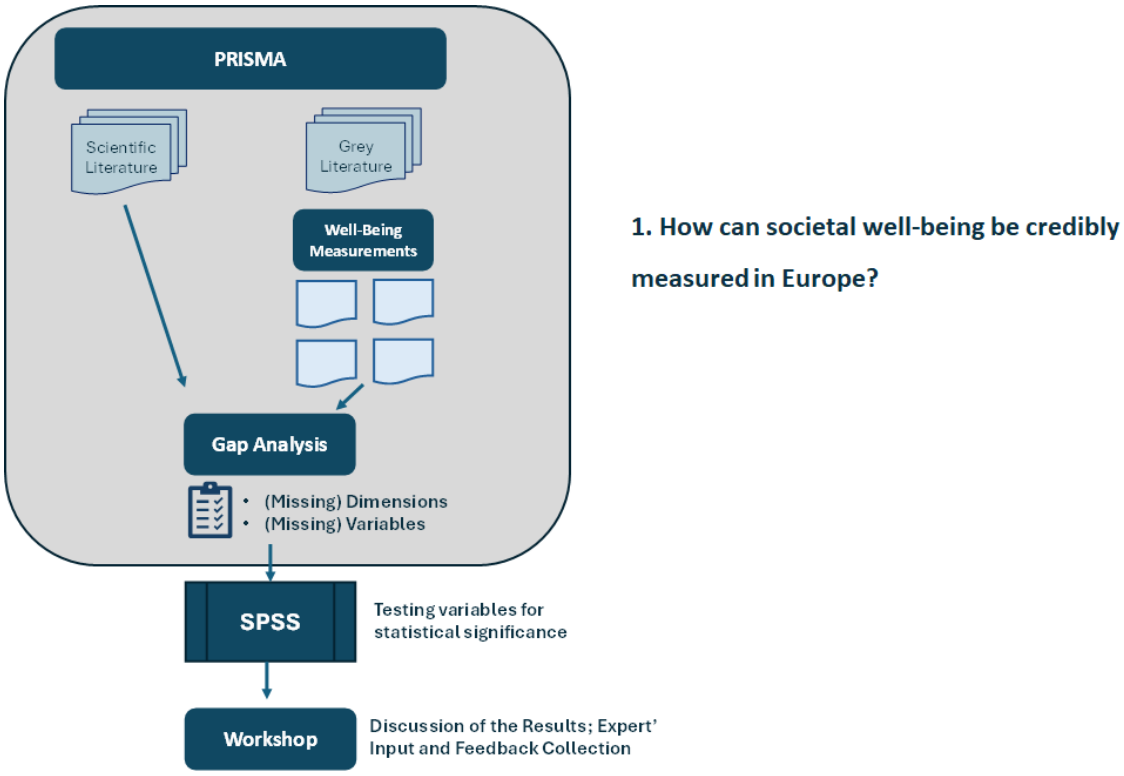

Figure 4 –Research Question 1: Applied Research Method

(Author's own creation)

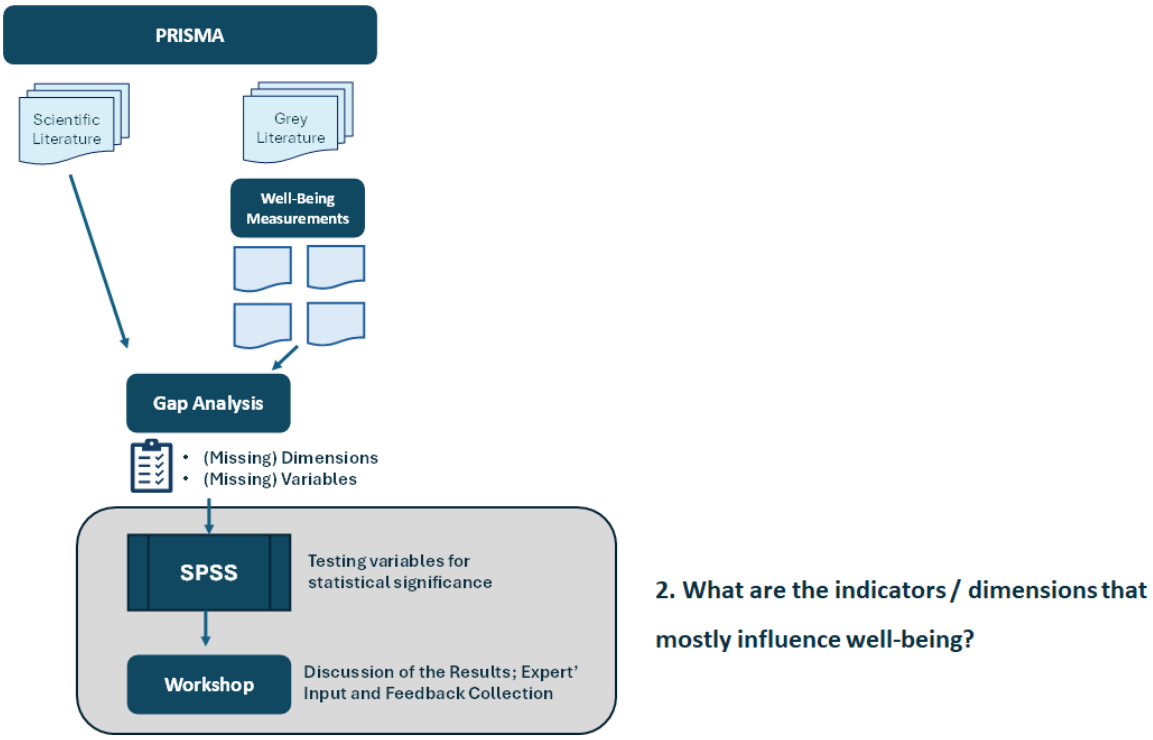

Figure 5 –Research Question 2: Applied Research Method

(Author's own creation)

1.5 Workshop Findings

On the 14th of October 2024 we hosted a workshop in the Nova University, at the School of Science and Technology Campus, on the *Science of Well-Being: From the Individual to the Organization and the Nations* and invited specialists from different areas aiming at discussing the results on the research conducted thus far. The several specialists covered areas such as positive psychology, environmental sustainability, globalization, economy, sociology and public health. It was highlighted by the specialists the complexity of this research by the relations different indicators can establish among each other. The systemic analysis (Hopkins, 2020; Meadows, 2015) and the need to identify predictive models for well-being, instead of the current ones based on past data, were identified as paths to be pursued in upcoming research. Additionally, it was underlined the importance of research

in this field consequently of 2024 economy Nobel prize winners, and how it is important to evaluate the context alongside with the data results, for which it was suggested to bring the model to specific case studies.

1.6 Methodology Results

1.6.1. Included Studies

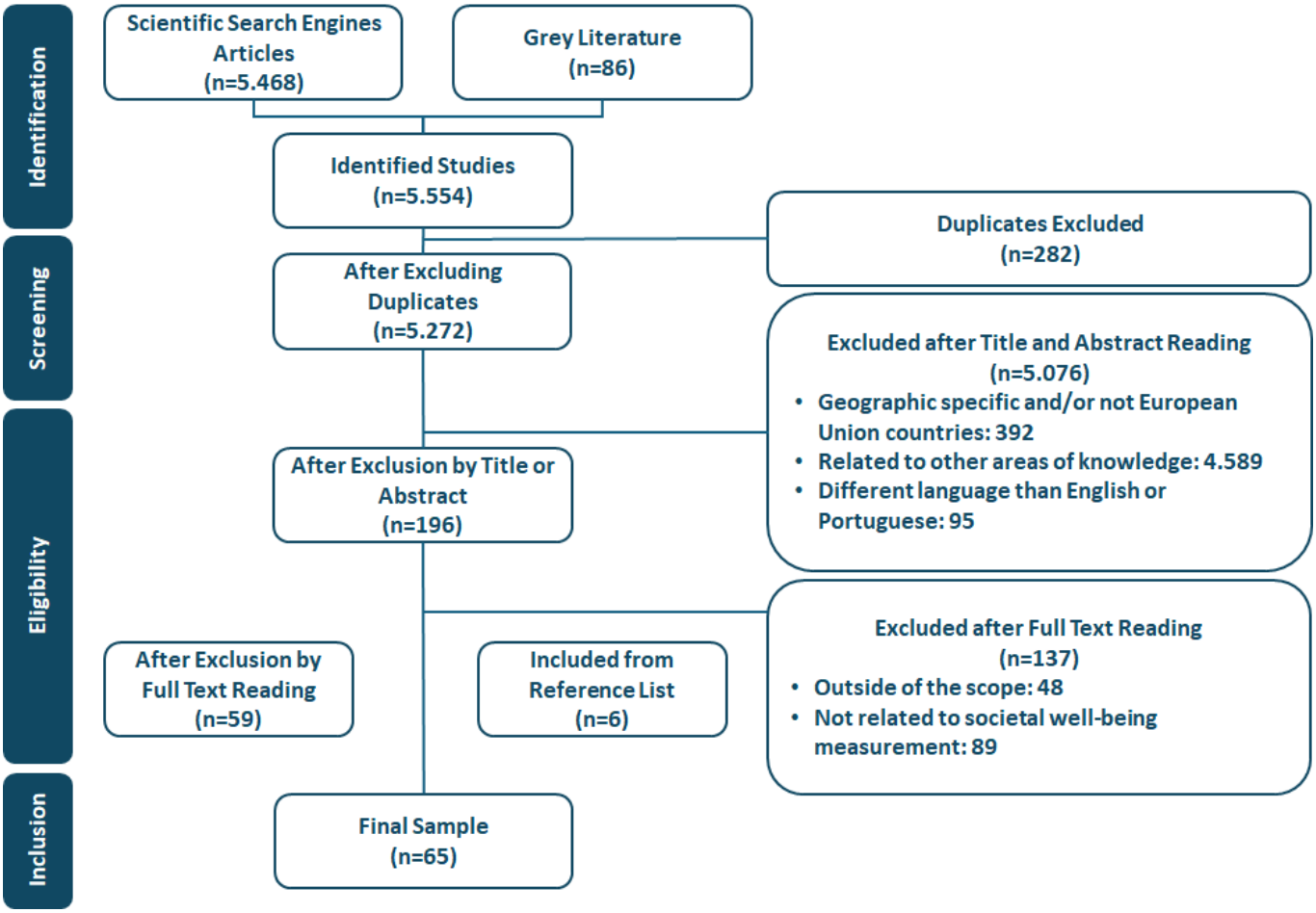

Figure 6 – Scoping Review Study Selection Adapted from PRISMA

Source: (Moher et al., 2015; Tricco et al., 2018) and Author's creation

In order to streamline the knowledge research sources and allow for focus in particular sections of the research, we have taken a progressive approach per topic area (thematic analysis, (Braun & Clarke, 2006)) we needed to research. The document search was performed between February 2022 and December 2023 following the same methodology, independently of the topic researched:

- Exploratory search in the scientific search engines to identify keywords and key authors;
- Search in both scientific search engines and grey literature using keywords, main authors, and identified arguments;
- Dedicated search in scientific search engines for particular references cited in the selected studies.

The study and document selection followed the PRISMA steps (Moher et al., 2015, p. 5) and considered the titles and abstract contents, excluding the ones which were not related to the selected keywords.

Chapter 2– Literature Review Results

2.1 The Concept Puzzle: Happiness, Well-Being, Life Satisfaction and Quality of Life

There are historical reasons which explain why so many different happiness related constructs have appeared, and it seems that consensus across the many scientific disciplines studying this phenomenon to what it is, or even to the definitions themselves, is still to be reached. We will not discuss here the history[3], but we will however attempt to bring some light into each of the concepts, clarify the distinct approaches different sciences take on using these concepts, as a basis for establishing an anchor to ground our construct upon which the research will evolve.

2.1.1 Happiness

Happiness has been a subject of interest from the ancient Greece to modern times. Initially studied by the Greek philosophers today it spans various scientific disciplines with a particular increase in terms of scientific production in the last 2 decades (Dominko & Verbič, 2019; Rando-Cueto et al., 2023).

In his book Nicomachean Ethics, Aristotle brought an important contribution from his teacher Plato, when he established the difference between hedonism and eudaimonia, concepts that endure today.

According to Aristotle, hedonistic happiness is related to immediate pleasure or gratification as opposed to pain or displeasure (Moore, 2019), hence to a short-term state. Eudaimonic happiness on the other hand is considered by Aristotle a stable sensation of contentment, not subject to variations in consequence of temporary contexts or events (Almugren, 2015, p. 13). This sense of contentment is also connected to higher values, a

[3] For more details please refer to Oman, S. (2021). *Understanding Well-being Data: Improving Social and Cultural Policy, Practice and Research*. https://doi.org/https://doi.org/10.1007/978-3-030-72937-0

lack of selfishness and a sense of service to others or the community welfare. Thus, the eudaimonia concept implies to be a long-term and consistent state.

The Aristotelian distinction between hedonic and eudaimonic well-being states is still applied today across different sciences when a particular aspect of well-being or happiness is being evaluated.

Researchers more commonly opt to use the eudaimonic definition for well-being, not only because it reports to a more sustainable state, but also to a more enduring one. Notwithstanding, it has been identified that there is a set point baseline of hedonic happiness for everyone, to which individuals tend to return to, regardless of the events in their lives. This adaptation mechanism was first described in 1971 by psychologists, Brickman and Campbell in "Hedonic Relativism and Planning the Good Society" (Brickman & Campbell, 1971). The concept was further expanded by Eysenck comparing the event to a treadmill for which the term hedonic treadmill was born. Diener et al. revised the theory establishing the set point as not neutral and individualized, for which each individual can have several set points throughout his/hers life (Diener et al., 2006).

No such phenomena were identified for eudaimonic well-being, accounting additionally for the rationale behind scientific researchers mostly choosing the eudaimonia concept for well-being rather than the hedonic one.

For philosophers, happiness is about two main blocks – "a state of mind" and "a life that goes well for the person leading it" (Haybron, 2020) for which different meanings and approaches apply. Psychologists focus on the state of mind approach as the focus is the mental state, the existence of depression or pleasure (id.) and link the concept of happiness to hedonism as a more short term and individualistic concept, applicable to non-human beings, while eudaimonia refers only to human beings, hence linked more to well-being and flourishing as proposed by Seligman (Crisp, 2021).

For the neuroscientists happiness and well-being are different concepts, related not only to the body's chemical and neurologic responses, but also related to a timeline in which these occur. Happiness is an emotion, an immediate, short-term response, while well-being is a feeling, an outcome of several responses and outcomes, from which we infer a more sustainable, medium to long term response.

Under the neuroscientist discipline, happiness is classified as an emotion, an outcome of brain processes that combines the interpretation of the physical response as well as the past experiences and acquired knowledge (Barrett, 2017; Damásio, 2012; Jawer & Micozzi, 2009; LeDoux, 1996). Feelings on the other hand are a more complex and complete process and are generated from our thoughts about emotions: "emotions occur within the body theatre. Feelings occur within the mind theatre" (Damásio, 2004, p. 24).

2.1.2 Well-Being

In 1990 the UNPD (United Nations Development Programme) defined well-being as a part of the Human Development concept. Human development is seen as an ever evolving and changing process for which two streams concur: a baseline requirement of human capabilities, in which education and access to health services are key, and a second stream building on the latter, referring to how people build on the baseline they have, whether in terms of work as well as in terms of leisure (United Nations Development Programme. & Haq, 1990). Hence, well-being is seen not only as an evolving concept but this definition leads us to consider its multidimensional characteristic (Prados-de-la-Escosura, 2015) for which different baselines provide different outcomes, as well as the way people make use of their baseline conditions will also be influential for the outcome they'll be receiving.

On a philosophical perspective Crisp argues well-being to be a more robust term to use in detriment of happiness, as it is an overarching concept encompassing 3 theories to explain it – hedonism, the desire theory and the objective list theory (Crisp, 2021).

Hedonism follows the approach of the Platonic dialogue of the human search for pleasure, or a positive balance between pleasure and pain. Different from the hedonism

theory, the desire theory suggests a more long-term approach from the original Platonic pleasure concept, and places its' argument on the "overall level of desire-satisfaction" in an individual' lifetime. The objective list theory argues that well-being can in fact be based on an item list that goes beyond the hedonism or desire theory claims, suggesting that there are other components besides pleasure or desire-satisfaction that contribute to overall well-being such as knowledge or friendship (id.).

The objective list theory approach was later followed by Utilitarianists, of which Bentham is one of the biggest references, mainly through his attempt in measuring the value of pleasure and pain (Bentham, 2007, Chapter 4).

Well-being has often been used in the medical context, defining broadly "the absence of ill-being" (Whittington, 2022) and with a surge in its application in the 1970's towards describing and setting the framework conditions for foetal and mental well-being.

Allin defines well-being by building on Maslow's hierarchy of needs (Maslow, 1943) and also in line with the objective list theory, arguing that well-being is not just the absence of ill-being but actually a state on the positive side of the spectrum, comprising physical, mental and social dimensions. He argues that for well-being to be attained, basic needs have to be met first, so individuals can pursue higher objectives as a purposeful life and active societal participation (Allin, 2007, p. 46).

Given the multitude of dimensions well-being entails, it is often sub-divided into objective well-being and subjective well-being, concepts which we will discuss next.

2.1.2.1 Objective Well-Being

Away from the concept itself and what it entails, the separation between objective and subjective well-being refers mostly to the nature of the indicators that are related to the measurement of well-being.

Objective well-being uses objective data indicators, i.e. indicators for which the data is not subjected to feelings or opinions, and come mainly from administrative data (income,

education or health) or survey data (as in a census) (Oman, 2021, pp. 42, 70). Objective well-being is seldom referred to as external well-being in opposition to the inner well-being, related to inner perceptions thus subjective well-being (Alatartseva & Barysheva, 2015).

2.1.2.2 Subjective Well-being

Inversely to objective well-being, subjective well-being is related to the individual's cognitive and self-perception of positive affect and its frequency, as well as with an overall satisfaction about his/hers life (Lopez & Snyder, 2011, Chapter 17; Lyubomirsky & Sousa, 2001). Nevertheless, subjective well-being is not about measuring the positive aspects and emotions of one's life but also encompasses the evaluation and measurement of negative emotions and its frequency (J. E. Stiglitz et al., 2009, p. 16; Tugade et al., 2002, p. 63).

Measured mostly through individual questionnaires, the data resulting from these questionnaires is subjective in nature (Oman, 2021, p. 42), portraying an individual state in the particular timing when the questionnaire is taken. Because of this volatile characteristic, the possibility of having different results throughout time, due to the individuals reflex on evolving life context and conditions, some authors (Oman, 2021, Chapter 3; J. E. Stiglitz et al., 2009, p. 150) argue the degree of unreliability of this type of data. However, psychologists and other scientists needing to access this type of data, continue to refute this argument as questionnaires seem to pose as the best tool to measure affective evaluations, emotions and cognitive judgements.

Seligman, the founder of positive psychology, whose work has been focusing on happiness and well-being, strengthened his theory by evolving from the authentic happiness theory to the well-being theory.

When framing the Authentic Happiness theory Seligman defined positive emotion, engagement, and meaning as the three pillars of what happiness is (Seligman, 2011, p. 11).

The author published a development of his initial theory with the Well-Being Theory in which he adds 2 additional pillars to his initial thesis: positive relationships and accomplishment, synthesizing the theory with the PERMA acronym.

With this evolution Seligman recognizes that well-being is an overarching, broader concept than happiness, and that no single pillar explains well-being as a whole, but that each of the pillars are contributing factors to it, measured both subjectively and objectively (id. p. 24).

2.1.3 Life Satisfaction

The Life Satisfaction concept gained increased traction upon Diener et al. Life Satisfaction Scale (SWLS) publication (Diener et al., 1985) and the author referred to it in several works after the original publication with the need to consider SWLS as a complimentary measure to scales which evaluate well-being (Lopez & Snyder, 2011; Pavot & Diener, 1993).

Other authors also refer to Life Satisfaction, but pointing to the concept as a sub-set of well-being or, in particular to subjective well-being, due to the judgemental or perception result of the overall quality of life (Hall, 2014; Lyubomirsky & Sousa, 2001; Mayer et al., 2021).

Oman on the other hand, although agreeing with this approach, justifies Life Satisfaction as a sub-set of well-being based on the way the concept is measured, i.e., through subjective evaluations (Oman, 2021).

The different authors share a common baseline in understanding that Life Satisfaction is a sub-set of well-being, that we could infer as a specific contributor to subjective well-being, given the subjective nature of the data required to measure life satisfaction.

2.1.4 Quality of Life

Quality of Life (QoL) was defined by World Health Organization (WHO) (World Health Organization, n.d.) and the concept has been applied since in different fields than health, such as economics, happiness and well-being, ecology or politics, as outlined by the Applied Research in the Quality of Life Journal.

Notwithstanding it was WHO's 1974's definition of health that set a bit of confusion when it included the concept of well-being in its definition by stating that "health is a state of complete physical, mental and social well-being, and not merely the absence of disease and infirmity" (Basic Documents, 2014, p. 1) .

In fact, Spitzer and Ware noted the confusion around the concept at the Portugal Conference on Measuring QoL (Post, 2014, p. 168), for which the health-related quality of life (HRQoL) was later defined (id. ibid. p.170).

Oman and Kirschman et al. consider QoL as a sub-set of well-being as the authors agree that the indicators which are considered under the QoL construct are important to explain well-being but do not translate well-being as a whole (Lopez & Snyder, 2011, p. 138; Oman, 2021, p. 41).

On the other hand, Layard argues that QoL is the proper measure of population happiness, and that the practical way to measure happiness is through life-satisfaction (Layard, 2009, p. 1). Layard suggests that on top of life-satisfaction, which already translates the satisfaction with different life domains, the measurement should also include the quality adjusted life years, as well as the impact on future generations (id. p. 3). However, the QoL index is not just the adjusted life years or the impact on future generations. The QoL index considers the aggregation of different objective indexes, such as the purchasing power index, pollution index, house price to income ratio, cost of living index, safety index, health care index, traffic commute time index, and climate index (Numbeo, 2022), none of

which consider life-satisfaction as Layard suggests, or subjective well-being as proposed by Stiglitz et al.(J. E. Stiglitz et al., 2009).

Stiglitz, Sen and Fitoussi define quality of life as a product of objective well-being (entailing objective indicators for measurement) and subjective well-being (as the indicators that can only be assessed through subjective of self-reported measurements), thus "to define what well-being means a multidimensional definition has to be used" (J. E. Stiglitz et al., 2009, p. 14).

Although the outcomes of the report by the Commission on the Measurement of Economic Performance and Social Progress are the most widely adopted, other economists propose a more simplistic approach, keeping however the concept of quality of life as the most important one.

The Economist intelligence Unit proposes yet another way to measure QoL.

Considering the starting point a subjective life-satisfaction survey, they add 9 determinants of the QoL to build the index (Economist Intelligence Unit, 2005, p. 1). The determinants are material well-being; health; political stability and security; family life; community life; climate and geography; job security; political freedom and gender equality (id. p. 2), weighed with the subjective life-satisfaction survey (id. ibid. p. 3).

It seems as 2 concurrent views of the QoL concept emerge – the former claiming QoL in its strict sense of the original definition, as a healthy life, thus as a sub-set of well-being, and the latter as a product of objective and subjective measures, in which the objective measure considers health indicators.

We argue that the latter approach of QoL is a result of the authors personal choices and preferences, based potentially on a what seems to be a more quantifiable measurement. QoL potentially brings also the advantage of being an internationally recognized naming convention, as it was firstly introduced and defined by WHO. Well-being as a construct hasn't brought, up until now, the same patronage as QoL, which is not to say

that the concepts are in fact diverse, but actually that the difference resides mostly in the naming convention.

"There is no single definition of wellbeing. The terms wellbeing, quality of life, happiness, life satisfaction and welfare are often used interchangeably (although some disciplines draw distinction between them)" (Allin, 2007, p. 46).

2.2 Moving Beyond GDP: The Reasoning and the Challenges

In this section we will investigate the importance of GDP as a measurement for a country performance and how it became a world-wide consensus. We will list GDP limitations while we discuss how the perception of GDP as an indicator has been erroneously perceived as able to measure evolving challenges to translate a country performance.

As such, we also discuss the link between economics and politics, not only through the voicing of GDP limitations, but also how the capitalist model and the liberal narrative provided, and still provide, the conceptual framework which supports and reinforces a GDP based approach. Although there are alternatives from a macroeconomic narrative perspective, we will see that the absence of a widely consensual normative model compromises the adoption of any GDP alternative measurement world-wide.

2.2.1 The Importance of GDP and Appointed Criticism

The world was addressing the 1929 Great Depression effects when Simon Kuznets initially introduced the Gross National Product (GNP) concept in the National Bureau of Economic Research (Kuznets, 1934). The first official release of GDP related data was done in 1934 in the United States by the System of National Accounts (SNA) as a way to answer the need to a reliable assessment on the post war economic recuperation (Ivković, 2016, p. 257).

With the Bretton Woods conference in 1944 establishing the International Bank for Reconstruction and Development (IBRD), soon to become the World Bank, and the International Monetary Fund (*Bretton Woods Conference & the Birth of the IMF and World Bank*, n.d.; *The Bretton Woods Conference, 1944*, 2009), the concept of GDP became widespread and was applied as a standard tool from then on. The SNA played an important role in the standardization of the data collection, calculation methods based on internationally agreed concepts and accounting frameworks (Ivković, 2016, p. 258), for which Kuznets is regarded as one of the biggest contributors (Rockoff, 2021). The GDP "how-to" has in the meantime evolved and adjusted throughout time, mainly with improvements in terms of methodologies on data collections and updates to the account systems to enable worldwide standardization and comparisons (Eurostat, 2014; OECD, 1995), with the support of international organizations such as the United Nations Statistical Division (UNSD), OECD, Eurostat, and the council of the European Union among others.

Given the post-war context at the time, GDP was regarded a considerable breakthrough as it leveraged the concept of higher production - better overall performance, and quickly became a synonym of a country progress (d'Ercole et al., 2006; Ivković, 2016).

This was not however Kuznets intention, as he himself warned for the limitations of the measure in his 1934 report (Kuznets et al., 1934; Özgöde, 2021) and when he stated "the welfare of a nation can (…) scarcely be inferred from a measure of national income"(Kuznets, 1934).

Kuznets was and is not alone on the criticism though.

Other Nobel laureates such as Sen, Stiglitz (J. E. Stiglitz, 2011), Samuelson (Samuelson, 1961) or Arrow (Arrow et al., 1996) among other economists have highlighted throughout the years the GDP limitations and challenged the measure reliability. Bergh (J. C. J. M. van den Bergh, 2011) summarizes the limitations by dividing the arguments into 8 (eight) categories, for which we add into 3 bigger groups of reasoning: Economical, Context and Well-Being.

Economical:

- Accounting – unlike standard organization accounting, GDP calculation considers costs and benefits together; furthermore, whenever a comparison overtime is required, corrections for the inflation may lead to inaccurate observations when the income distribution for the population is heterogeneous (J. C. J. M. van den Bergh, 2011, p. 3);
- Informal economy – GDP measurement doesn't capture the activities occurring in the informal markets; moreover, GDP growth can sometimes be translated by the transition of informal market activities onto the formal markets which doesn't stand by to actual market growth; on the other hand, medium and less developed countries often display a bigger weight of the informal economy[4] and considering GDP only may depict a wrong picture of the country performance (J. C. J. M. van den Bergh, 2011, p. 7);
- Unvalued activities – identified in 2013 by Nussbaum, GDP doesn't account for unpaid work, such as housework, an activity that otherwise would be valued (M. C. Nussbaum, 2013).
- Limits to substitution in consumption – following the Maslow pyramid concept, human basic needs substitution is very limited, i.e., the need of air can hardly be replaced by a fancy car. Despite the fact that there can be a growth in material consumption as an imperfect compensation of basic needs, mostly in urban settings, welfare can remain constant or even decrease (J. C. J. M. van den Bergh, 2011, p. 4).
- Aggregated data – aggregation of data leads to information loss (id. p.9), as by the use of single averages mean or mode, it can hide inequalities and can lead to "loss

[4] According to IMF this value is of 35% of the GDP in low and middle income countries and 15% in advanced economies (International Monetary Fund, 2021). According to the World Bank report, informal economy in Europe and Central Asia reached 36% of the GDP in the period of 2010-2018. For additional information and data please refer to (Ohnsorge & Yu, 2022)

of critical regions of the data" (Marvasti, 2010; Mckee & Miljkovic, 2007; Orcutt et al., 1968).

Context:

- Income inequalities – Not considering the income distribution, as GDP accounts for average income, hides unequal income distribution which leads to different social inequalities and opportunities in health, education, civic engagement, participation, etc. (J. C. J. M. van den Bergh, 2011, p. 6).
- Environment – another criticism pointed to the GDP measurement (parallel to the growth narrative which we will touch below) is the assumption that GDP growth can potentially grow continuously while natural resources are limited (Gaffney et al., 2022; Meadows et al., 1972; Raworth, 2017b). Additionally, the fact that GDP does not account for natural environment and resources as these are non-marketable, be it when the goods are delivered to us such as clean air, as when they become polluted or depleted (ex: fish stocks or forests) and are presented as externalities. In fact, the cleaning of polluted oceans does increase GDP (Arrow et al., 1996).

Well-Being:

- De-linking between GDP and social well-being– although there are studies showing a significant positive correlation between GDP and well-being (Helliwell, 2003, p. 15; Myers & Diener, 1995, pp. 12–13), evidence suggests that well-being does not increase at the same pace as GDP and that can even be capped at some point (Easterlin & O'Connor, 2020; Helliwell, 2003; Myers & Diener, 1995). This can be explained through individual' adaptation to the context, - be it an increase in income or a lottery win, be it in an unfortunate situation – for which after a determined period of time, the individual reported well-being level returns to its baseline. Diener and Layard named this phenomena as the hedonic adaptation or hedonic treadmill (Diener et al., 2006; Layard, 2005) while Max-Neef has theorized about the threshold hypothesis (Max-Neef, 1995). On the other hand, activities that boost well-being

such as relaxation or leisure time are not captured by GDP or considered as non-productive.

In fact, in 1974 Easterlin published what came to be known as the Easterlin Paradox (Easterlin, 1974), in which evidence points to no incremental changes in happiness when wealth increases, further reinforced by his long-term time series study in 2020 (Easterlin & O'Connor, 2020) , which Layard has bridged with the hedonic treadmill (Layard, 2005). The GDP concept was again questioned as the growth – happiness paradigm seemed to have no evidence supporting it, due to, as Layard argues, adaptations individuals make throughout their lives, keeping the happiness baseline more or less constant.

In the eighties Sen presented the capabilities approach (Sen, 2009; Walker & Unterhalter, 2007), challenging the long standing economists' view on expressed preferences, which was further developed by Nussbaum (M. C. Nussbaum, 2001, 2003) by including an economist feminist perception.

Nussbaum reinforced the argument in 2013 when alerted for another GDP limitation, as it doesn't account for unpaid work, such as housework, an activity that otherwise would be valued (M. C. Nussbaum, 2013).

2.2.2 The Need to Go Beyond GDP and Key Challenges

Aiming to address GDP shortcomings, in a world which it is context and challenges are very different than the ones in the 1930's and 1940's, while at the same time identifying one (or several) indicator(s) that could measure a nation's progress including the economic, environmental and social well-being aspects, several experts (Durand & Smith, 2013; Easterlin, 1995; Radermacher, 2015; J. E. Stiglitz et al., 2009) and stakeholders (European Union, 2007) have been engaging in a discussion in what this new measurement should be.

Stiglitz et. al alert for the limitations of the current econometric models and how we've become over reliant on GDP as a single indicator (OECD, 2018, Chapter 2). Consequently to the 2008 financial crisis, which started in the USA and contaminated other

region markets, the authors argue the signs of the eminent crisis were available in additional indicators ahead of the crisis, but somehow overlooked (id. ibid.).

The discussion on how to move beyond GDP is however still lacking consensus. Some argue that one single indicator correcting and complementing GDP is the best approach, others advocate for composite indicators, or even a limited set of indicators to complement GDP are suggested (European Union, 2007). On the other hand, there isn't a consensus in terms of what should be measured, as "changes in the economy and society affect both what we want to measure and the adequacy of our metrics" (OECD, 2018, p. 27). Incrementally to the technical problems in terms of the right choice of metrics and data availability, changes in the world regarding the rise of inequalities, environmental sustainability, changes on the economy structure and economy digitalisation bring additional challenges to the debate (id., Chapter 1). If what we measure gets actioned upon, there is also evidence that although better or complementary indicators are available within the system of national accounts, they are not "routinely used by those making decisions" (id. ibid. p. 33).

Constanza et. al. agree with the challenges of identifying the right metrics as all proposed indicators "are proxies and limited in scope" and have issues related with "data availability, reliability, (…) accuracy and concerns about the objectivity or subjectivity of the underlying methodology" for which the authors suggest the need for an agreement on "workable solutions" (Costanza et al., 2009, p. 30). The authors also underline complementary barriers to the adoption of alternative indicators such as the social and institutional barriers. According to Costanza et. al. these barriers are related to the "dominance of 'growth is good' paradigm", the "lack of political leadership" and the "vested interest in maintaining the status quo" (Costanza et al., 2009, pp. 27–28) which are preventing the progress to better measures of a country' performance.

2.2.3 From the Technical Criticism to the Political Discourse

Although erroneously, as its definition does not enclose growth, the GDP concept has been mingled with a country's growth (Özgöde, 2020), which entails the premise of continuously seeking GDP increments, hence unlimited growth and unlimited resources. .

Additionally, somehow the notion of growth got associated with improvements on the well-being of the populations, thus GDP has been (also erroneously) considered as a proxy indicator for the increase of populations' well-being. Being a measure for well-being was far from being a GDP objective when it was first created. Nevertheless, that narrative somehow got embedded into the concept (Brinkman & Brinkman, 2011), which provided green field for some politicians to challenge the GDP approach, bringing the technical flaws into the political discourse.

Criticism around GDP was raised by Robert F. Kennedy in 1968 in a speech in the University of Kansas when he referred to "[gross national product] measures everything in short except that which makes life worthwhile" (Kennedy, 1968) .

The France President Nicolas Sarkozy also raised concerns in 2009 (Nicolas Sarkozy Wants "well-Being" Measure to Replace GDP, n.d.) when endorsing the Commission on Measurement of Economic Performance and Social Progress, a commission with the objective to find an alternative indicator to GDP, and lead by GDP detractors such as Stiglitz (Jolly, 2009) and Sen (Drèze & Sen, 2013).

In 1972 the concept of Gross National Happiness (GNH) was firstly mentioned by Jigme Singye Wangchuck, the 4th King of Bhutan, when he referred that this concept was more relevant than GDP (Bhutan's Gross National Happiness Index, n.d.). Nonetheless it took 36 years until the first survey in Bhutan took place, so the concept could be applied for the first time in 2008 (Ura, 2017).

2.2.4 Dethroning GDP – Is It Possible?

In the 18th century, Smith referred “It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest” (A. Smith, 2007, p. 16) describing what could be considered the essence of what capitalism is: an economic system in which supply and demand freely set prices in the market and private entities control property according to their best interests (Jahan & Mahmud, n.d.).

A “laissez-faire” capitalism, the economic doctrine of capital accumulation, ruled most economies for centuries and was in force until 1918. However, when the World War I came to an end a crisis was underway. Although there was an unprecedented degree of state intervention during the war period, the model started to be questioned. On one hand the workers aimed for social reforms, and reconstructionist’ aimed to address some of the workers demands, avoiding social unrest, as reconstructionist were as well challenging the identity of capitalist states (Mattei, 2022, pp. 54; 56).

The war revealed that the economic priorities were in fact political priorities, and in order to meet those there were no financial or budgetary constraints. This empowered the workers claim and reconstructionist alike to impose structural changes and move for a Social State, in which welfare was to be considered (id. p. 58). A movement to provide for social security to the working class alongside with measures to redistribute capital within the society worked as a strategy to avoid social convulsion, engage the society in the post-war reconstruction commitment, while keeping at large the capitalist model, both economically and politically, stable (id. ibid. p.72).

In fact, a new form of capitalism was coming to life. The questioning of the system that followed the economic crisis of 1929-32, the need to adopt the Keynesian approach

through state intervention to counter-cycle the crisis[5], and the workers demands for more social protection, gave birth to what is called the neo-capitalism in the capitalist states which haven't experimented fascists or authoritarian approaches (Mandel, 1973, Chapter III). Neo-capitalism is then defined as the "latest stage in the development of monopoly capitalism" in which the "combination of factors – accelerated technology innovation, permanent war economy, expanding colonial revolution" (Mandel, 1968, p. 5) played important roles.

What differs neo-capitalism from capitalism is the incremental intervention of the state in the economy, typically to contain and revert capitalist crisis periods (Mandel, 1973, p. 45).

With the end of World War II approaching a new international economic order was coming to life, with the establishment of international economic agreements and institutions. The Bretton Woods agreement, with the creation of IMF and what came to be known as the World Bank, the General Agreement on Tariffs and Trade (GATT) and the implementation of the US's Marshall Plan provided the international framework of stabilization much needed for national economies to thrive in the post-war recovery, while keeping the capitalist model "in a more orderly and mutually beneficially manner" (Glyn et al., 1988, p. 28).

The capitalist economies came to know an unprecedent era of development, between 1950 and 1973, seldom called the Golden Age of Capitalism, with unparalleled growth rates both in productivity as well as in capital accumulation (Glyn et al., 1988, no. III).

However, the Golden Age started to fade in 1968 with a clear impact in 1973 with the stagnation that followed until its final erosion in 1979. The key reasons which justify the

[5] The economical cycles mentioned refer to the Kondratieff's long waves in economic life theory (Kondratieff & Stolper, 1935) in which the authors analyse the cyclical nature of capitalism with periods of expansion and periods of retraction consequence of technological development in the world-system.

erosion of the Golden Age vary according to different authors, but a mix of endogenous fragilities to the capitalist system and exogenous factors undoubtedly played its role(s). The macroeconomic structure, the system of production, the rules of coordination (with the pressures of real wages growth, pressures of competition, income maintenance and the welfare state) alongside with the exogenous OPEC's oil shock prices (Glyn et al., 1988, pp. 40–61) all played a role in the end of capitalism' Golden Age.

Capitalism has spread through the world and become a macroeconomic and dogmatic narrative widely adopted. Wallerstein explains this movement and the ties of capitalism and globalization through his World System Theories, in which the production factors of work and capital determine the split between the core and the peripherical regions (Martínez-Vela, 2001; Wallertstein, 1974). Capital intensive countries become core regions while labour intensive regions are considered peripherical, whilst semi-peripherical states act as buffers between the core and peripherical regions (Martínez-Vela, 2001, p. 4), for which the ownership of technology plays a determinant role. The World System theory, or the "world economy" as Wallerstein coins it, draws upon from the Dependency theory and both set up the backdrop upon which many of the contemporary world capitalism critiques are formulated (id.3).

As Harvey points out, capitalism is based upon natural resources as a constant and continuous provider. Destroying the environment, in line with Marx's work, is as relevant as destroying other production factors such as the work force, as both contribute to the production of capital and wealth (Harvey, 2010, p. 307). Amir focuses on the inequalities which result from the struggle between the core and peripherical countries, with a dedicated outlook on the development of the African countries, but generalizable to the Global South[6]. According to the author, the inequalities expand from the economic, through

[6] The expression Global South "refers broadly to the regions of Latin America, Asia, Africa, and Oceania. It is one of a family of terms, including "Third World" and "Periphery," that denote regions outside Europe and North America, mostly (though not all) low-income and often politically or culturally marginalized" (Connell & Dados, 2012, p. 12). Within the same context the expression Global North refers to mostly developed or 1st world northern hemisphere countries, such as European countries and the US.

income, wealth and power distribution, to the social, through unemployment, as well as political distortions which are mostly a consequence of the former 2, namely the technological (quasi) monopolies, communication and information, and global usage of natural resources (Abdulyakeen, n.d.; Amin, 1973, 2014). Sennet identifies the social aspects of the capitalism narrative vices, and how they have influenced and transformed the societies at large through the unfulfillment of its promises, such as freedom of choice (Sennett, 2006, p. 13), the switch from individualism to indifference and lack of responsibility (id. p.164), and how meritocracy, usefulness and craftmanship are disregarded by the system itself (id. ibid. pp.182-195).

The philosophical background which framed the capitalist and neo-capitalist economies, liberalism and neoliberalism respectively, provided the context narrative for the "world mental conceptions" (Harvey, 2010, pp. 110–111) to shift and evolve throughout time based on individualism, self-accountability and freedom. The neoliberal narrative became so widespread that impacted deeply the way of thinking, and got embedded on how individuals perceive and live their everyday lives (Harvey, 2008, pp. 2–3).

Capitalist fragilities and internal tensions however have led to question if there could be a macroeconomic and philosophical narrative which could potentially pose as an alternative. Fragilities such as the (excessive) use of the environment, the inequalities in terms of development between largely the Global North and the Global South have paved the way for different authors to come forward and conceptualize different alternative development models, to be presented as potential alternatives to the neo-capitalism and neo-liberalist approaches. Additionally, the identification of the GDP flaws as the key indicator for a country's performance were often parallelized and fuelled the discussion whether the macroeconomic narrative context had to be challenged, mostly due to data coming from the environmental degradation, risking the sustainability of vital ecosystems for humanity to thrive.

Macroeconomic narratives became divided into pro-growth approaches (Acemoglu, 2009), namely the green growth discourse (Allen & Clouth, 2012; Newton & Catarello, 2014), no growth (Jackson, 2009) and degrowth (D'Alisa, Giacomo; Demaria, Federico; Kallis, 2015; Domazet et al., 2020; Raworth, 2017a; Guske et al., 2019; Jackson, 2009; Pissarskoi, 2017; J. C. J. M. Van Den Bergh & Kallis, 2012).

Several proposals, within each of the macroeconomic narratives, have been put forward at different scales, suggesting a different set of values and principles to guide the development and sustainability of the population (Kothari et al., 2019). Aiming for a reform and a paradigm shift, the proposals conceptually range from environmental, religious, feminist and well-being based, to the extent in which they were theorised for application – locally to nationally / globally.

Among the different proposals, the most notorious are the approaches of Buen Vivir (Calisto Friant & Langmore, 2015; Chuli et al., 2019; Gudynas, 2011; Morales et al., 2019), Ubuntu (Gaim & Clegg, 2021; Ontong & Le Grange, 2014; Tomaselli, 2016; University of Pretoria, 2006), Doughnut Economics (Raworth, 2017b) or the Permaculture (Holmgren, 2011).

Nonetheless, there hasn't been a strong enough driver to push beyond the lack of consensus on the development framework needed to be adopted. This stand-still, potentially due to long entrenched capitalist and liberal values which shaped all economic actors, from governments to the private sector, supported by the media and the globalization phenomena, fosters the continued discussion across the different visions.

2.3 Societal Well-Being Measurements

In this section we investigate societal well-being measurements, challenges and policy implications, alternative indicators born out of proposed corrections to GDP limitations, what these indicators correct and what they entail.

Narrowing our analysis to allow us to focus on well-being measurement, the scope of our research, we look at the available indexes and dashboards and we describe the outcome differences of some of the indicators when compared to GDP over the same period.

We also list country specific initiatives to measure well-being around the world, and we show how the comparison among different indexes necessarily brings divergent results, as the indicators differ across the indexes and dashboards.

2.3.1 Societal Well-Being and Policy Implications

If any government agrees with Thomas Jefferson's view that "the care of human life and happiness, and not their destruction, is the first and only legitimate object of good government" (Jefferson, 1809), the measurement of well-being must take a central role for policy making. Measuring societal well-being allows for the understanding of the several sources of well-being, supports economists and policy-makers to support their decisions on data driven inputs rather than assumptions, and allows for comparisons within and across countries.

There are however obstacles to overcome in terms of measuring societal well-being. As we propose in our conceptual model, societal well-being derives from individual well-being and according to Kubra-Krys et al. these are correlated, as societal well-being is "individualism-themed" (Krys et al., 2021). In fact, several studies have demonstrated that the indicator life-satisfaction when considered as an aggregated average value to depict societal life-satisfaction is correlated with national levels of individualism (id. p. 2197). The

authors suggest the inclusion of different indicators of happiness, namely to accommodate for cultural differences of well-being types, as even if they overlap and reinforce each other, they're qualities may differ (such as in the concepts of "happiness, spirituality, meaning") (id. ibid. p. 2208).

Furthermore, the use of aggregated values may hide distribution asymmetries, inequalities, within and across countries. Beyond inequality in income, health, or life evaluations, "evidence suggests that people prefer (…) less inequality in the distribution of well-being" (Helliwell, 2021). Pinar's study of European regions between 2000 and 2014 demonstrated that even when multidimensional well-being improves and inequality decreases at the individual and community levels, it remains unchanged at a national level (Pinar, 2019). This seems to suggest that societal well-being needs to be measured with a detailed indicator landscape to account for the complementarity or perfect substitution of well-being dimensions as the "choice of interaction levels between the dimensions has major EU policy implications" (id. p. 65).

Governance is another aspect that interplays with well-being. According to Layard and De Neve, government conduct, democracy quality (especially in developed countries) and quality of legal institutions in low income countries are all correlated[7] to country life-satisfaction (Layard & De Neve, 2023, pp. 253–259). Corroborating the finding for democracy quality, Stutzer and Frey demonstrated that a higher political participation is conducive of higher levels of well-being for both citizens and foreigners, even if foreigners report lower increases in life satisfaction as they are excluded from "procedural utility" (Stutzer & Frey, 2006). This study conducted in the different Swiss cantons suggests that well-being is improved with the possibility of political participation (id. p. 412).

The size of the government measured in welfare expenditures – expansion on the welfare state - and government expenditure on goods and services also demonstrate to have a positive relationship to well-being (Layard & De Neve, 2023, pp. 261–262). These

[7] Correlation does not necessarily mean causal relationship.

results hold consistent for government regimes as "more left-leaning state governments predicted higher levels of life satisfaction" (id. p. 264), whilst at an individual level studies seem to point to higher levels of well-being in right-wing individuals than left-wing ones.

The multi-dimensional aspect of well-being, along with the constraints of individual to societal values, culture sensitivity and governance point us to the adoption of complex frameworks with a multitude of indicators to account for. But the challenge cannot be limited on the how to measure - it needs to go beyond on the how to evaluate the effects of well-being policies. As Stutzer and Frey refer, maximizing aggregate well-being to a "social welfare function" may not be enough as it is required to "improve the nature of the political process", suggesting that a procedural view is preferable to the pursue of one single indicator (Frey & Stutzer, 2010).

2.3.2 Beyond GDP: Alternative Measurements

In order to address GDP limitations, several proposals have been put forward aiming to correct GDP identified fragilities or even as alternative measurements that could potentially be adopted and generalised.

The alternative measurements to GDP available to date can be grouped in 4 main categories[8]: Corrections of GDP, for which a sub-category for the Green(ed) or Sustainable GDP fall into, Genuine Savings / Investments, Composite Indexes (J. van den Bergh & Antal, 2014) and Dashboards and can be summarized as depicted in the table below:

[8] Note that categories may vary according to authors. The European Commission considers Enlarged GDP, Social Indicators, Environmental Indicators and Well-Being as the alternative GDP measurements categories fall into. For additional information please refer to https://ec.europa.eu/environment/beyond_gdp/indicators_en.html (European Commission, n.d.-b). On the other hand Constanza et al. consider that the categories are split among Corrections to GDP and SNA accounts, Well-Being, Composite Indexes and Indicator Suites (Costanza et al., 2009)

Table 2 – GDP Alternative Measurements Summary Table

Category	Alternative Indicator	Brief description
Corrections of GDP	Measure of Economic Welfare (MEW)	Builds on GDP and classifies all spending into consumption, investment or intermediate. It adds leisure and household work and correct "disamenities of urbanisation" (Aitken, 2019)
	Index of Sustainable Economic Welfare (ISEW)	Builds on GDP and additionally accounts for environmental issues as well as corrections for income inequalities (J. van den Bergh & Antal, 2014; J. C. J. M. van den Bergh, 2011)
	Genuine Progress Indicator (GPI)	Revision of ISEW to consider the accounting of voluntary work, leisure time, criminality and others (Stigliz et al., 2011; J. C. J. M. van den Bergh, 2011)
Green GDP	Sustainable National Income (SNI)	Includes the sustainability constrains regarding 9 environmental topics (Gerlagh et al., 2002)
	Gross Ecosystem Product (GEP)	Measures the value of the ecosystem for citizens in a single monetary metric (Hu et al., 2023; Ouyang et al., 2020)

(Cont.)

Category	Alternative Indicator	Brief description
Green GDP (Cont.)	Ecological Footprint (EF)	Measures the amount of ecological resources needed to be produced in order to outweigh the resources consumed and the generated waste by the population (Stigliz et al., 2011)
Genuine Savings / Investments	Genuine Savings (GS)	Builds on the traditional net savings and includes corrections by deducting depletion of natural resources, pollution among others. Expenditures on education are classified as a human capital investment (J. van den Bergh & Antal, 2014)
Composite Indexes[9]	Human Development Index (HDI)[10]	Aggregates a number of indicators providing weights to each of them (J. C. J. M. van den Bergh, 2011)
	Inequality-adjusted Human Development Index (IHDI)	Developed from HDI, it adjusts the average values by considering country inequalities in the dimensions of Health, Education and Income (Alkire et al., 2011; UNDP, n.d.)

[9] We haven't considered the Physical Quality of Life Index (PQLI) under the Composite Indexes classification in this table as the index is strictly related to the concept of Quality of Life, a WHO definition much related to the absence of ill-being / illnesses rather than the broader concept of well-being (Morris, 1978)

[10] The Human Development Index (HDI) was firstly published in 1990 (United Nations Development Programme. & Haq, 1990) and was also developed from Sen's capabilities approach as the author believed measures of human development had to consider "what people can do and what they can become" (Measure of America of the Social Science Research Council, n.d.).

(Cont.)

Category	Alternative Indicator	Brief description
Composite Indexes (Cont.)	Human Poverty Index (HPI)	Builds on HDI with different weights (J. C. J. M. van den Bergh, 2011)
	U-Index	Measures the time the individual spends in an undesired emotional state. (Kahneman & Krueger, 2006)
	Living Planet Index (LPI)	Depicts the average rate of change in animal population sizes (*Living Planet Index*, n.d.)
	Happy Planet Index (HPI)	Compares countries through the index consisting of well-being, life expectancy and ecological footprint (Costanza et al., 2009)
	Happy Life Expectancy Index (HLE)	Multiplies life expectancy with the average national happiness score (Veenhoven, 1996)
	Balanced Development Index (BDI)	Aggregates 42 indicators grouped into external economic, internal economic, social expectations and current social condition (Hązła & Hązła, n.d.; Koźmiński et al., 2020)

(Cont.)

Category	Alternative Indicator	Brief description
Composite Indexes (Cont.)	World Happiness Report Index (WHR)	Proposed in 2012 in the first issue of the World Happiness Report (Sachs, Jeffrey D.; Helliwell, John F.; Layard, 2012), the index considers GDP per capita, social support, healthy life expectancy, freedom to make life choices, generosity and corruption perception compared to an imaginary Country - Dystopia
	OECD Better Life Index	Index based on 11 indicators and personal responses of citizens around the world. This will enable overtime for OECD to build a picture of what citizens "believe shapes a good life" (OECD, n.d.-b)
	Inclusive Wealth Index	Accounts for the social value of natural, human, and produced capital assets (European Commission, n.d.-b; Hoekstra, 2022)

(Cont.)

Category	Alternative Indicator	Brief description
Composite Indexes (Cont.)	Quality of Life Index	Multi-component index using a life-satisfaction survey as a means to estimate the weights for the different determinants of QoL: Material well-being; Health; Political stability and security; Family life; Community life; Climate and geography; Job security; Political freedom and Gender equality (Economist Intelligence Unit, 2005; United Nations Development Programme. & Haq, 1990)
Dashboards	Sustainable Development Goals (SDGs)	17 goals the subscribing countries have committed to address until 2030 (THE 17 GOALS | Sustainable Development, n.d.; United Nations, 2022)
	Commission on the Measurement of Economic Performance and Social Progress (CMEPSP)	Report with recommendations on GDP alternative measurements. The operationalization of these recommendations are available in OECD's How's Life report (J. E. Stiglitz et al., 2009)

(Cont.)

Category	Alternative Indicator	Brief description
	OECD How's Life report	First published in 2011 (OECD, 2011), builds on the Commission on the Measurement of Economic Performance and Social Progress (CMEPSP's) recommendations, and considers 14 dimensions and over 80 indicators
	Subjective Well-Being	Proposals with different indicators on how to measure subjective well-being based on the individual interview feedback (Almugren, 2015; Helliwell, 2003)
Dashboards (Cont.)	National Income Satellite Accounts	Additional accounts valued in other units that not money to provide additional indicators on a country performance (Allin, 2007; Eurostat, 2010b, 2010a; J. E. Stiglitz et al., 2009)[11]
	Calvert-Henderson Quality of Life Indicators	Considers a twelve quality of life indicators: education, employment, energy, environment, health, human rights, income, infrastructure, national security, public safety, recreation and shelter (European Union, 2007).

[11] The National Income Satellite Accounts has been updated to 2025 SNA - System of National Accounts (European Commission; International Monetary Fund;Organisation for Economic Co-operation and Development; United Nations; World Bank, 2025). Details available at https://unstats.un.org/unsd/nationalaccount/sna2025.asp and https://unstats.un.org/unsd/nationalaccount/docs/2025_SNA_Pre-edit.pdf

(Cont.)

Category	Alternative Indicator	Brief description
Dashboards (Cont.)	Millennium Development Goals and Indicators	Result of the Millennium Declaration (General Assembly Resolution 55/2, 2000) the dashboard comprehends 8 goals and over 60 indicators
	Comprehensive Wealth	Accounts for a nation's assets in terms of produced capital, financial capital, natural, human and social capital (Ivey Foundation; & International institute for Sustainable Development, 2018; Ivey Foundation; International Institute for Sustainable & Development, 2018).
	Europe 2020 (Eurostat)	Set of indicators in 4 domains to track European Union's strategy (Eurostat, 2019a, 2020; Pasimeni, 2011)

Sources: (Aitken, 2019; Ametep et al., 2022; Birkjær et al., 2021; Centre for Thriving Places, 2022; Costanza et al., 2009; Cuneo et al., 2010; Department of Finance Canada, 2021; Economist Intelligence Unit, 2005; European Commission, 2020; Eurostat, 2019b; Exton & Shinwell, 2018; Henderson, 2000; Hoekstra, 2022; Ivey Foundation; International Institute for Sustainable & Development, 2018; Kahneman & Krueger, 2006; *Living Planet Index*, n.d.; Tavernier et al., 2015; UNEP - UN Environment Programme, 2018; United Nations, 2008; J. van den Bergh & Antal, 2014; Yi, 2009; Alkire et al., 2011; UNDP, n.d.; Veenhoven, 1996; Hązła & Hązła, n.d.; Koźmiński et al., 2020)

Out of these alternative measures, depicted in table 2, the ones which do not consider simultaneously the 3 dimensions of environment, social and economic well-being

are: Measure of Economic Welfare (MEW), Index of Sustainable Economic Welfare (ISEW), Sustainable National Income (SNI), Gross Ecosystem Product (GEP), Ecological Footprint (EF), Genuine Savings (GS) and Living Planet Index (LPI)[12].

Frequently compared to a car control panel, dashboards are a way to provide different but related information in a glance, in an easy-to-digest manner. Dashboards should be comprehensive information panels but not so extensive that all the main information cannot be seen in one glance. Indexes on the other hand summarize all the information in one single numeric score, that can be included in a dashboard or used to build rankings. Indexes are usually convenient for fast comparisons against equally measured indexes and provide a fast and relatable information regarding the subject positioning. Both the Sustainable Development Goals and OECD's How's life are dashboard based but both have recurred to the building of indexes (OECD, n.d.-b; Sachs, Jeffrey; Schmidt-Traub, Guido; Kroll Christian; Durand-Delacre, David; Teksoz, 2017; Sachs et al., 2016) to aid in the tracking of the information and, for the OECD index specifically, the possibility to add complementary information directly from citizen's inputs.

Berik has made an assessment in terms of the usage of some of the alternative indicators to GDP and the results can be summarized by the table below:

[12] We haven't included here the Inclusive Wealth index as the UNEP, the responsible entity for issuing of the indicator annual report, considers that the indicator "measures a nation capacity to create and maintain human well-being over time" (*Inclusive Wealth Report 2023: Measuring Sustainability and Equity*, 2023; United Nations Environment Programme, 2023).

Top 10 countries							
Country	GDP per capita	Country	HDI	Country	Life evaluation (Cantril Ladder)	Country	HPI
Qatar	127,480	Norway	0.949	Finland	7.632	Costa Rica	44.7
Macao SAR, China	105,420	Australia	0.939	Norway	7.594	Mexico	40.7
Luxembourg	102,389	Switzerland	0.939	Denmark	7.555	Colombia	40.7
Singapore	87,833	Germany	0.926	Iceland	7.495	Vanuatu	40.6
Brunei Darussalam	77,421	Denmark	0.925	Switzerland	7.487	Viet Nam	40.3
Kuwait	74,264	Singapore	0.925	Netherlands	7.441	Panama	39.5
United Arab Emirates	72,400	Netherlands	0.924	Canada	7.328	Nicaragua	38.7
Ireland	71,472	Ireland	0.923	New Zealand	7.324	Bangladesh	38.4
Switzerland	63,889	Iceland	0.921	Sweden	7.314	Thailand	37.3
San Marino	60,933	Canada US	0.920	Australia	7.272	Ecuador	37.0
Lowest 10 countries							
Central African Rep.(CAR)	699	188 CAR	0.352	156 Burundi	2.905	140 Chad	12.8
Burundi	778	187 Niger	0.353	155 CAR	3.083	139 Luxembourg	13.2
Congo, Dem. Rep.	802	186 Chad	0.396	154 South Sudan	3.254	138 Togo	13.2
Liberia	813	185 Burkina Faso	0.402	153 Tanzania, United Rep.	3.303	137 Benin	13.4
Niger	986	184 Burundi	0.404	152 Yemen	3.355	136 Mongolia	14.3
Malawi	1,169	183 Guinea	0.414	151 Rwanda	3.408	135 Côte d'Ivoire	14.4
Mozambique	1,217	181 Mozambique + South Sudan	0.418	150 Syrian Arab Rep.	3.462	134 Turkmenistan	14.6
Sierra Leone	1,476	179 Eritrea + Sierra Leone	0.420	149 Liberia	3.495	133 Sierra Leone	15.3
Togo	1,491	178 Guinea-Bissau	0.424	148 Haiti	3.582	132 Swaziland	15.5
Madagascar	1,506	177 Liberia	0.427	147 Malawi	3.587	131 Burundi	15.6

Figure 7 – Country rankings by aggregate indicator for the period 2015-2017

Source: (Berik, 2018, p. 8)

Figure 4 demonstrates that the countries' ranking order varies according to the indicator being used as the indicators considered in each of them differ.

When detailing the comparison of some indicators against GDP, we can streamline the reasons which explain the differences between the results. Comparing GPI and GDP for the period of 1950 – 2004 for the USA, as depicted below in figure 5, we can easily observe a divergent trend from 1960 onwards, mainly due to the increase in the personal consumption expenditures and a parallel decrease on non-market time spent (Talberth et al., 2007, pp. 19–20).

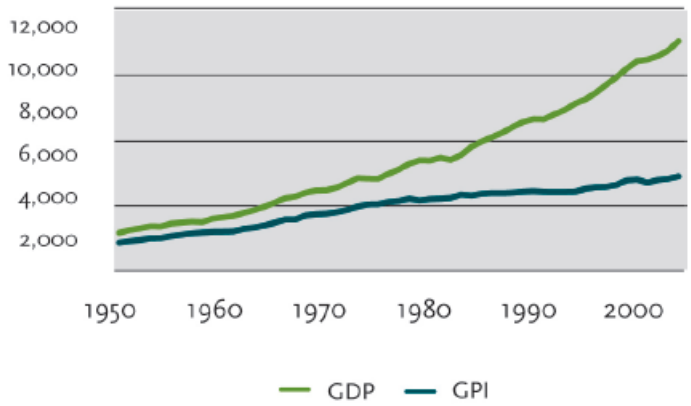

Figure 8 – Real GDP and Real GPI trends for the period 1950-2004

Source: (Talberth et al., 2007, p. 19)

Comparative analysis between GEP and GDP also show differences across time. Case studies conducted in China regions show that GEP grew almost 28% in the period of 2000-2020 in the Fujian Province, although GDP grew faster in the same period (Hu et al., 2023). In Qinghai the results differ as GEP for the period of 2015-2020 was higher in 2015 but reached only three fourths of the GDP in 2020, due to an important growth on the market economy of the region (Ouyang et al., 2020). A similar comparative study using ISEW for Siena in 1999, shows a consistent result from the one retrieved in the analysis for Italy, demonstrating a gap between ISEW and GDP of 37% of the GDP. This gap is justified mainly by the impact of exhaustible resources depreciation and the expenditure on consumer durables (F. M. Pulselli et al., 2006). The findings are consistent for Tuscany as well (F. M. . Pulselli et al., 2012). Particularly for ISEW, the decoupling between development and resource use is a relevant factor to evaluate the gap between this indicator and GDP, for which Beça and Santos have established that ISEW has a greater sensitivity (Beça & Santos, 2014).

In order to overcome GDP identified shortcomings, and as we can clearly see, alternative measures to GDP abound, however a technical consensus is yet to be reached

as no single measure corrects fully the GDP limitations. In addition, there hasn't been a political agreement for its replacement. In fact, although it has been widely recognized the need to go beyond GDP, the topic hasn't been classified as a top priority on the political agenda (Costanza et al., 2009) except for the fact that the national statistics need to be reinforced and improved, to provide additional indicators in order to support the public policy decision making process.

Hence, several countries have decided to take the initiative into their own hands sharing a common baseline concern towards well-being. The table below depicts the several countries which have pursued a well-being complementary measurement approach, tailor sizing it to their specificities[13]:

Table 3 – Well-Being National Dashboards Summary Table

Country	Model: Dashboard / Index
Australia	Measure of Australia's Progress (MAP)
Austria	How's Austria
Belgium	Complementary indicators to GDP
Bhutan	Gross National Happiness (GNH)
Brazil	Portal ODM
Canada	Index of Well-Being

[13] The United Arab Emirates have developed a National Well-being Strategy for 2031, constituted a Ministry of State for Happiness headed by Ohoud Khalfan Al Roumi, and have taken national surveys on happiness and well-being in 2016 for which the results have not been published to date. Among the different UAE initiatives in regards to well-being, a country charter has been implemented - UAE's National Charter for Happiness. However, the charter focuses solely on the work environment of governmental bodies, hence we have not considered UAE's initiative in the table. For additional details please refer to https://u.ae/en/about-the-uae/the-uae-government/government-of-future/happiness and https://www.bayut.com/mybayut/all-about-happiness-ministry-dubai/

(Cont.)

Country	Model: Dashboard / Index
China	Shenzen: Gross Ecosystem Product Approach Hong Kong: Quality of Life
Denmark	Quality of Life Survey
Ecuador	Buen Vivir (INEC, Ecuador Statistics Office indicators)
Finland	2023 National Action Plan (Findicator)
France	Quality of Life Survey
Germany	Gut Leben in Deutschland
Iceland	Quality of Life Survey
India	Gross Domestic Knowledge Product / Development Indicators
Ireland	Measuring Ireland's Progress
Israel	Well-being, Sustainability and National Resilience Indicators
Italy	Equitable and Sustainable Well-Being (Benessere Equo e Sostenibile – BES)
Japan	People's Life Indicators/ Quality of Life Survey
Korea	Quality of Life Index
Latvia	Latvia 2030
Luxembourg	Well-Being Index (LIW)
Mexico	Indicadores de bienestar (well-being indicators)
Netherlands	The Social State of the Netherlands and the SCP Life Situation Index
New Zealand	Indicators of Current Quality of Life (Aotearoa New Zealand programme)
Northern Ireland	Northern Ireland Outcomes Delivery Plan
Norway	Quality of Life in Norway Report of 2020

(Cont.)

Country	Model: Dashboard / Index
Poland	Responsible Development Index
Portugal	Well-Being Index
Scotland	National Performance Framework
Slovenia	Indicators of Well-Being (National Development Strategy 2030)
South Africa	South African Development Index
Spain	Quality of Life Indicators
Sweden	New Measures for Well-Being
Switzerland	Monet 2030 Indicator System
Thailand	Societal progress Indicators / Happy Societies
United Kingdom	Thriving Places Index (TPI)
United States of America	State of the USA / American Human Development Project
Wales	Well-Being of Wales

Sources: (Aitken, 2019; Ametep et al., 2022; Birkjær et al., 2021; Centre for Thriving Places, 2022; Costanza et al., 2009; Cuneo et al., 2010; Department of Finance Canada, 2021; Economist Intelligence Unit, 2005; European Commission, 2020; Eurostat, 2019b; Exton & Shinwell, 2018; Henderson, 2000; Hoekstra, 2022; Ivey Foundation; International Institute for Sustainable & Development, 2018; Kahneman & Krueger, 2006; *Living Planet Index*, n.d.; J. E. . Stiglitz et al., 2018; Tavernier et al., 2015; UNEP - UN Environment Programme, 2018; United Nations, 2008; J. van den Bergh & Antal, 2014; Yi, 2009),(Australian Bureau of Statistics, 2012, p. 36; Brandt et al., 2022; Exton & Shinwell, 2018; Hoekstra, 2022; United Nations - Economic and Social Council, 2022) and author's own creation

2.4 Well-Being Dashboards, Dimensions and Indicators

Based on the PRISMA Results and the Grey Literature relevant texts we were able to identify the different national well-being measurements:

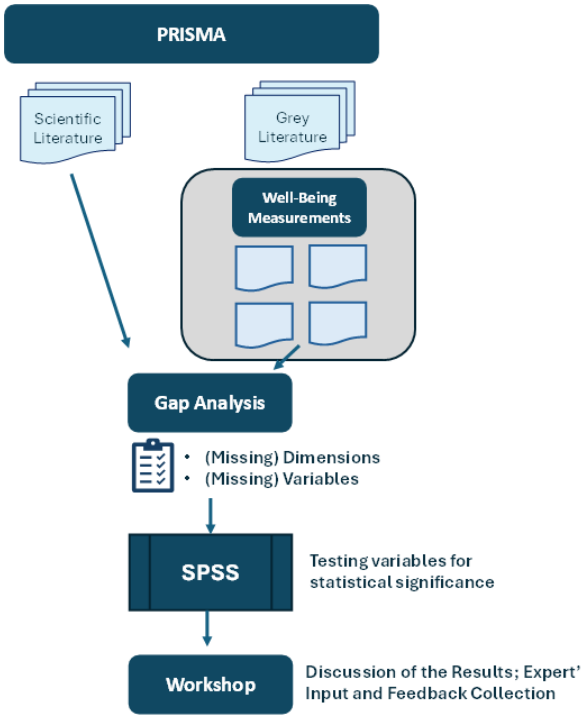

Figure 9 – Applied Method and Results

(Author's own creation)

We then listed the existing multi-country dashboards, deep dived into the indicators detail of each of the dashboards so we could establish a comparison among them in terms of the dimensions and indicators used in each of them.

We will then perform a gap analysis in terms of the missing dimensions and indicators that are suggested by the scientific well-being related research, and the dimensions and indicators in the existing dashboards. This analysis will enable us to identify if any dimensions or indicators are missing and add them if applicable.

2.4.1 A Comparative Analysis of the Well-Being Dashboards and Indicators

Several multi-country dashboards for measuring well-being are available, and the comparative table below provides a dimension summary of the different dashboards. A detailed comparison, also including the considered indicators under each dimension, is available in Annex 1 of this document.

Table 4 – Well-Being Dashboards: Dimensions[14] and Indicators Comparison Table

Multi-Country Dashboards

Commission on the Measurement of Economic Performance and Social Progress [(1)]	How's Life[(2)]	Sustainable Development Goals (SDGs)[(3)]	Subjective Well-Being[(4)]	National Income Satellite Accounts[(5)]	Calvert-Henderson Quality of Life Indicators[(6)]	Millennium Development Goals and Indicators[(7)]	Comprehensive Wealth[(8)]	Europe 2020 (Eurostat)[(9)]
Income	Income and Wealth	SDG 1: No Poverty			Income	1: Eradicate extreme poverty and hunger		
Health	Health	SDG 2: Zero Hunger SDG 3: Good Health and Well-Being		Health Accounts	Health	Eradicate extreme poverty and hunger Reduce child mortality Improve maternal health Combat HIV/AIDS, malaria and other diseases		
Education	Knowledge and Skills	SDG 4: Quality Education			Education	Achieve universal primary education		Education
Personal Activities	Work-Life Balance	SGG 8: Decent Work and Economic Growth		Labour Accounts and SAM				
Political Voice and Governance	Civic Engagement	SDG 16: Peace, Justice and Strong Institutions						
Social Connections	Social Connections			Social Protection Accounts	Recreation			
Insecurity	Safety				Public Safety National Security			
Environmental Conditions	Environmental Quality	SDG 13: Climate Action		Environmental Accounts	Environment	Ensure environmental sustainability		Climate Change and Energy
	Subjective Wellbeing		Subjective Well-Being Questionnaires					
	Housing	SDG 6: Clean Water and Sanitation		Household Production Accounts	Shelter			
	Work and Job Quality	SDG 5: Gender Equality		Productivity and Growth Accounts	Employment	Promote gender equality and empower women		Employment
	Economic Capital	SDG 9: Industry, Innovation and Infrastructure SDG 12: Responsible Consumption and Production		Research and Development Accounts			Produced Capital Financial capital	R&D
	Natural Capital	SDG 14: Life Below Water SDG 15: Life on Land					Natural capital	
	Human Capital						Human Capital	
	Social Capital						Social Capital	

[14] We define here dimensions as units aggregating different but conceptually related variables; Exception for the OECD How's Life dashboard as some of the variables described in the summary table, such as the Environmental Quality or the inequality variables, in fact account for dimensions, aggregating several variables.

(Cont.)

Multi-Country Dashboards

Commission on the Measurement of Economic Performance and Social Progress [1]	How's Life[2]	Sustainable Development Goals (SDGs)[3]	Subjective Well-Being[4]	National Income Satellite Accounts[5]	Calvert-Henderson Quality of Life Indicators[6]	Millennium Development Goals and Indicators[7]	Comprehensive Wealth[8]	Europe 2020 (Eurostat)[9]
		SDG 7: Affordable and Clean Energy		Agricultural Accounts	Energy			Poverty and Social Exclusion
		SDG 10: Reduced Inequalities		Tourism Satellite Accounts	Human Rights			
					Infrastructure			
		SDG 11: Sustainable Cities and Communities						
		SGG 17: Partnerships for the Goals				Develop a global partnership for development		

Sources:

(1) - (J. E. Stiglitz et al., 2009)

(2) -(Helliwell, 2003; OECD, n.d.-a, 2020)

(3) - (United Nations - Economic and Social Council, 2022; United Nations, 2015, 2022)

(4) – (*Eurobarometer*, n.d.; *Gallup World Poll*, n.d.; Tran, 2013; Voukelatou et al., 2021; Watson et al., 1988)

(5) - (Eurostat, 2010a)

(6) - (Flynn et al., 2000; Henderson, 2000)

(7) - (General Assembly Resolution 55/2, 2000; MDG Monitor, n.d.; Millennium Development Goals Indicators - Official List of MDG Indicators, 2008; Millennium Development Goals Indicators - The Official United Nations Site for the MDG Indicators, n.d.)

(8) - (Ivey Foundation; & International institute for Sustainable Development, 2018; Ivey Foundation; International Institute for Sustainable & Development, 2018)

(9) - (Athanasoglou & Dijkstra, 2020; Eurostat, 2019b, 2019a; Pasimeni, 2011)

And author's own creation

When analysing the 9 different dashboards we see that in terms of dimensions the top 5 dimensions more commonly used across the different dashboards are Environment, Health, Education, Work and Income, as depicted below in table 5. Out of these 9 dashboards, only 2 of the generic dashboards consider the Subjective Well-Being dimension.

Table 5 - Well-Being Dashboards: Dimension Comparison Summary Table

(Author's own creation)

Dimension	CMEPSP	OECD How's Life	Sustainable SDGs	Subjective Well-Being	National Income Satellite Accounts	Calvert-Henderson QoL Indicators	Millennium Development Goals	Comprehensive Wealth	Europe 2020 (Eurostat)	TOTAL
Environment	x	x	x		x	x	x		x	7
Health	x	x	x		x	x	x			6
Education	x	x	x			x	x		x	6
Work		x	x		x	x	x		x	6
Income	x	x	x			x	x			5
Economic Capital		x	x		x			x	x	5
Work-Life Balance	x	x	x		x					4
Social Connections	x	x			x	x				4
Housing		x	x		x	x				4
Others			x		x	x	x			4
Governance	x	x	x							3
Safety	x	x				x				3
Natural Capital		x	x					x		3
Subjective-Well-Being		x		x						2
Human Capital		x						x		2
Social Capital		x						x		2
TOTAL	8	15	11	1	8	9	6	4	4	

As only 2 of these set of dashboards consider the subjective well-being, OECD's How's Life and Subjective Well-being dashboards, a central dimension for this research, we will drive our focus to these, especially to the OECD's How's Life dashboard as it is the operationalization of the CMEPS recommendations and it is the most comprehensive one, capturing both context quantitative dimensions and indicators, as well as subjective measures.

2.4.2 Gaps in the Indicator Landscape

Despite the complexity in the indicator landscape of the dashboards, consequence of the number of existing indicators, PRISMA results seem to suggest that there are missing dimensions that are not being covered, and that there are dimensions

that, while being considered, are not being adequately covered in terms of what the relevant indicators may be.

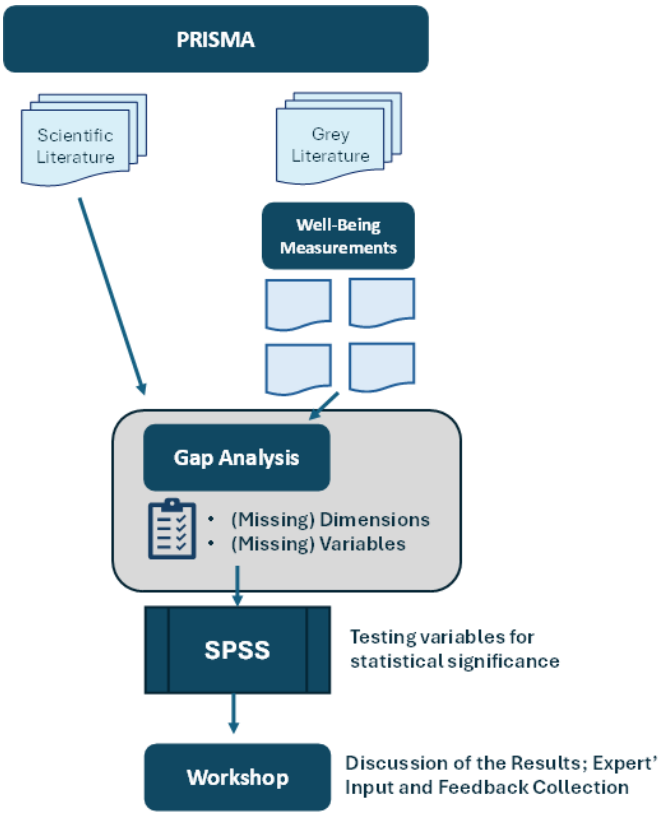

Figure 10 – Applied Method and Results

(Author's own creation)

We will treat these two issues separately next.

2.4.2.1 Missing Dimensions and Proposed Indicators

2.4.2.1.1 Working Environment and Conditions

Working is an important part of individual's well-being (J. E. Stiglitz et al., 2009, p. 44) and for the employed individuals an important slice of their available time is spent working.

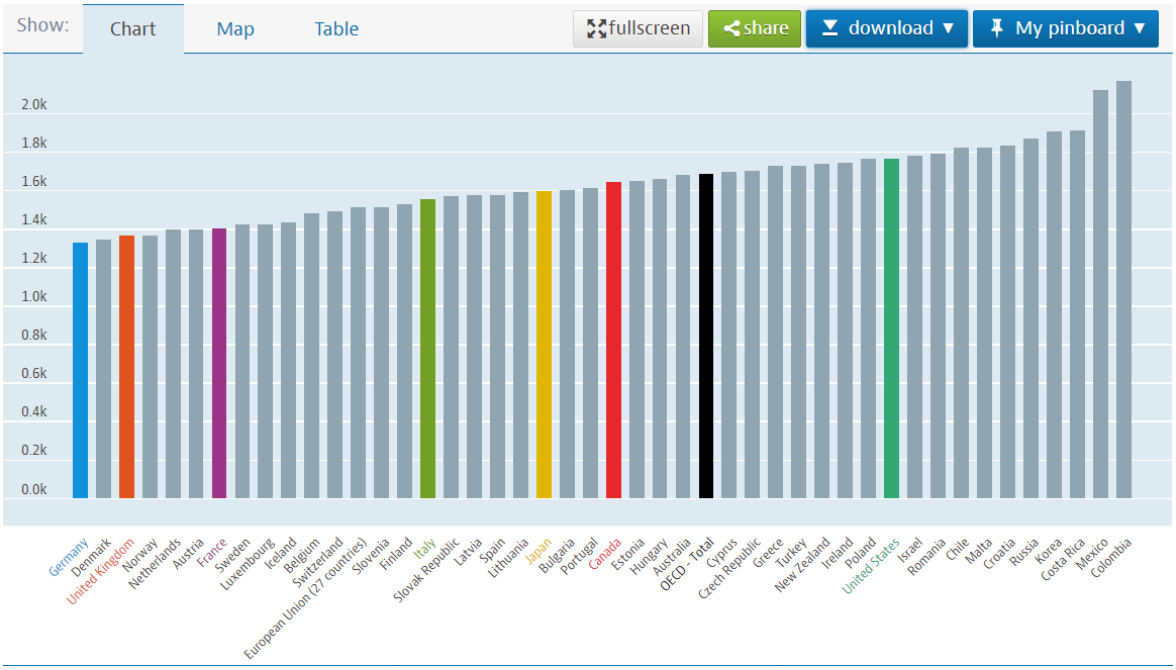

Figure 11 – Hours Worked: Total, Hours/Worker, 2020 or latest available

Source: (OECD, 2022)

For 2022 the OECD country average of worked hours is of 1.687 hours per year, which translates into an average of 31,65 hours per week (World Population Review, 2022), weighing 26% of the full day[15].

Pfeffer alerts for the health associated costs in consequence of burn-out and work stress related conditions (Pfeffer, 2018). Understanding how individuals feel at the workplace is therefore important, not only because the number of employed individuals available time spent working is non neglectable, but also because it directly influences individual well-being.

This has been magnified during 2019-2022 covid pandemic period (Milasi et al., 2020) as a significant part of the employed workers was confined working from home and working extended hours (Eurofund; International Labour Office (ILO), 2017, p. 21;

[15] If we consider Time Use, adding paid and unpaid work, the average rises to 45% (OECD, 2024)

Lodovici, 2021, p. 39) leading to recommendations on the “right to disconnect” (ETUC - European Trade Union Syndicat Confederation, 2021).

Hence, it is important to evaluate, beyond work or employment objective indicators, the individual’s perception of their work and work environment and how it impacts their well-being, through subjective measurements. In order to do so, it seems relevant to evaluate the individual perception of the following aspects:

- Decent / Precarious Work – contractual bond to the employer (long-term; short-term, self-employed, no contractual bond);
- Job insecurity – individual perception and concern about the possibility of losing the job;
- Paid hours;
- Working hours (including care givers, housework, child care, etc.);
- Company engagement – individual perception of the sense of belonging to the employer organization, perception of having the voice heard or sense of being significant to the employer institution;
- Colleagues trust – sense of trust towards the co-workers;
- Hierarchy trust - sense of trust towards direct line managers or higher management;
- Turn-over - individual perception of the organization’s turn-over;
- Stress level - individual perception of the experienced stress while working;
- Flexibility – individual perception of the effortless in scheduling and taking time-off, attending medical appointments, doing remote work, having flexible working hours, etc.;
- Individual value acknowledgement - perception of how much the institution values the individual;
- Inequalities in the working environment - inequalities relating to salaries, promotions, gender, ethnicity, religion or others.

This approach is consistent with the 2020 OECD Well-Being framework as following international best practices and member countries consultation decided

to include new themes and indicators such as “unpaid work” and revamp the dimension “Jobs” to “Work and Job Quality” (Stefaner et al., n.d.).

2.4.2.2 Missing Indicators in Already Existing Dimensions

In some of the considered dimensions additional indicators may be required, in order to more accurately translate the dimension itself.

2.4.2.2.1 Health

One of the recommendations of the CMEPSP is the inclusion of combined health measures (J. E. Stiglitz et al., 2009, pp. 162–163). Out of the 3 measures discussed in the report, Disability-Adjusted Life Years (DALY), Disability-Free Life Expectancy (DFLE) and Health-Adjusted Life Expectancy, only DALY is for now available. Despite the appointed limitations of the measures and the efforts to overcome these (id.), the Commission still recommends its inclusion in the dashboard, which we will follow.

2.4.2.2.2 Mental Health Status

Although mental health is addressed in 3 out of 8 indexes, and the OECD How’s Life considers 2 mental health related indicators within its Health dimension, it seems some additional indicators should be considered to allow for a more holistic understanding of the country’s status in regards to the mental health of its citizens.

The indexes which consider mental health seem to measure it through self-perception and subjective data while there are indicators available that would allow to illustrate the reality with objective figures. Hence, the proposed indicators are:

- Hours of sleep (Harvard Medical School, 2021);
- Annual consumption of anxiolytics and antidepressants;
- Burn-out and stress related hospital occurrences;
- Psychiatric and psychological consultations;
- Number of mental health specialized professionals.

2.4.2.2.3 Crime rate

Safety or insecurity is a dimension considered in 2 of the indexes (Wellbeing Budget 2021 Securing Our Recovery, 2021; OECD, 2020) and is recommended by the CMEPSP (J. E. Stiglitz et al., 2009). Of all the indicators considered in the dashboards and the recommendations, crime rate is not mentioned. We believe this to be a relevant indicator as it correlates with poverty, unemployment, police enforcement and the judicial system at large. Furthermore, crime rate impacts individuals' perception of safety or insecurity.

2.4.2.2.4 Environment: Quality and Planet Boundaries

6 out of the 8 dashboards consider the Environment as a needed dimension to assess well-being. Moreover, and considering the existing context of global climate emergency, we believe that any dashboard needs to consider sustainability as pre-requisite for mankind, first and foremost to exist, and latter to thrive.

Environmental related indicators abound, and consensus is still missing to which set of indicators / framework model better addresses the route back from the Anthropocene into the Holocene (Crutzen, n.d., 2021).

The United Nations' 17 Sustainable Development Goals (SDGs) (THE 17 GOALS | Sustainable Development, n.d.) could be a good framework for this as it gathered the consensus of the 193 countries who have subscribed the 2030 Agenda for Sustainable Development.

However, since the undertaking of the SDGs in September 2015 and later the same year the Paris Agreement (Organização das Nações Unidas, 2015), little to no improvements were actually attained, more recently confirmed throughout the discussions in the UN Climate Change conference UK 21 (UN Climate Change & UK Government, 2021a, 2021b), commonly referred to as COP 26. Furthermore, the goals can be contradictory among themselves, as the detailed definitions on how to reach them are not described.

Hence, we needed to find a robust environment framework which provided a clear view in terms of the operating thresholds, while making visible which indicators were overshooting the threshold in order to allow governance, from governments, businesses and the communities, to take the necessary corrective actions.

Based on the work developed by the Stockholm Resilience Centre (SRC) we will be adopting the Planetary Boundaries (PBs) model and the respective thresholds which define the safe operating space for humanity (Steffen et al., 2015). This framework defines 9 PBs:

- Climate Change;
- Ocean Acidification;
- Stratospheric Ozone Depletion;
- Atmospheric Aerosol Loading;
- Biogeochemical Flows:
    - interference with P and N cycles;
- Global Freshwater Use;
- Land-System Change,
- Rate of Biodiversity Loss and Chemical pollution (id. pp. 8-9).

As this framework was built for a global evaluation, an adaptation will be required to downscale it to a national level, so the model can be applied and evaluated against a country' data. Oxfam's analysis provides already guidelines to do so, as the model was applied to UK reality (Sayers & Trebeck, 2015), as well as the Swedish Environmental Protection Agency, when it applied the model against Sweden's PBs (Nykvist et al., 2013). The downscaling per country was followed by University of Leeds researchers, whose data set we will be applying.

Although this framework has been largely embraced by the science community, there is significant criticism to the model. Montoya, Donahue and Pimm argue that the threshold definition is "entirely arbitrary" (Montoya et al., 2018). Discussions around the boundaries, of being inadequate either because they are too generous or too

conservative are also abundant as Biermann and Kim summarize (Biermann & Kim, 2020), testifying to the lack of consensus for a unique environmental framework.

Despite the discussions around the threshold definition and setting, we've opted for this model as it is the only one which constrains and provides a country performance evaluation regarding the respect for the limits of the environment. When the thresholds are revised, the evaluation and conclusions of this research need to be revised accordingly.

2.4.2.2.5 Subjective Well-Being

In the subjective well-being dimension indicators also differ among the 5 dashboards considering this dimension. However, 3 indicators are absent from all of them and seem significant in terms of individual well-being: the individual perception of purpose, accomplishment, and physical activity.

2.4.2.2.5.1 Purpose

Purpose has several definitions. One of purpose's best descriptions may be found with Frankl (Frankl, 1959) described in extent as a survival coping mechanism in the concentration camps during World War II. Purpose is strongly related to meaning as there's no life purpose without meaning. More recently Csikszentmihalyi defined that in order to attain purpose individuals should have a "goal that can give significance to their lives" (Csikszentmihalyi, 1991). In general, purpose has been defined as "as a self-organizing life aim that stimulates goals, manages behaviour, and provides a sense of meaning" (Cohen et al., 2016, p. 122). Purpose has been confirmed as a verifiable component of well-being (Ryff & Keyes, 1995) and correlated to health (Cohen et al., 2016; McKnight & Kashdan, 2009).

2.4.2.2.5.2 Accomplishment

Accomplishment is one of the pillars in Seligman's Well-Being theory (Seligman, 2011) and scientific research has confirmed its ties to well-being (Butler & Kern, 2016; Gander et al., 2017; Wagner et al., 2020), so it seems important to assess whether this indicator is relevant to assess an individual's well-being as part of the dashboard or not.

Accomplishment additionally relates to engagement in the work environment (Shuck & Reio, 2014), a indicator we will be assessing single handled and as part of the Work Conditions and Environment dimension.

Purpose and accomplishment differ. While accomplishment is a sense of reflection of fulfilment for what one has done in the past, conquered milestones and objectives, purpose on the other hand is related to how one organizes its activities to bring meaning to life in service to others, hence a more outward sense of fulfilment with a take on the future.

Traditionally accomplishment data is gathered through questionnaires.

2.4.2.2.6 Physical Activity

Physical activity (PA) and well-being correlation can be explained through several hypothesis ranging from the physiological ones (Marques et al., 2021; Stuart & Nanette, 2008, p. 197) to playing “a role as valuable sources and features of a fulfilling life” (Bloodworth et al., 2012). Bloodworth et al. also establish the link between sports and well-being (id.) discussing the several approaches underneath whose the link can be observed, being it an objectivist one, a capabilities approach (M. C. Nussbaum, 2001; M. Nussbaum & Sen, 1995) or a subjectivist one.

As there is a plethora of scientific research establishing a link between physical activity and well-being, evidence is scattered in terms of PA impacts on health, mental health and diverse positive effects, but “virtually none show negative effects” (Stuart & Nanette, 2008).

It seems therefore relevant to include this indicator into the dashboard, regardless of the lack of consensus of what the root cause may be influencing well-being.

For all 3 additional indicators within the subjective well-being dimension, a measurement through individual questionnaires is required and thus, these indicators, as the other subjective well-being indicators, will be subjective in nature.

2.4.2.2.7 Housing – Energetic Poverty

While there is no unique definition for energetic poverty (Chlechowitz & Reuter, 2021, p. 2; Habitat for Humanity, n.d.; Magdialinski et al., 2021, p. 2) or a consensual global threshold upon which energy poverty can be measured, there is significant data on this phenomenon, the impacts it produces and the deepen inequalities it provokes.

Energy poverty needs to be considered in the context of increasing climate change events, affecting the whole planet and the increasing demands for energy (International Energy Agency, 2018), but also on the perspective of the inequalities it raises, and the direct impacts on citizens' health, applicable both in periods of cold and heath (Jessel et al., 2019).

It is estimated that in 2019 energy poverty impacted 30 million citizens in Europe alone (Magdialinski et al., 2021) while in 2018 the estimate of impacted population around the world was of 1 billion, 13% of the whole population (International Energy Agency, 2018).

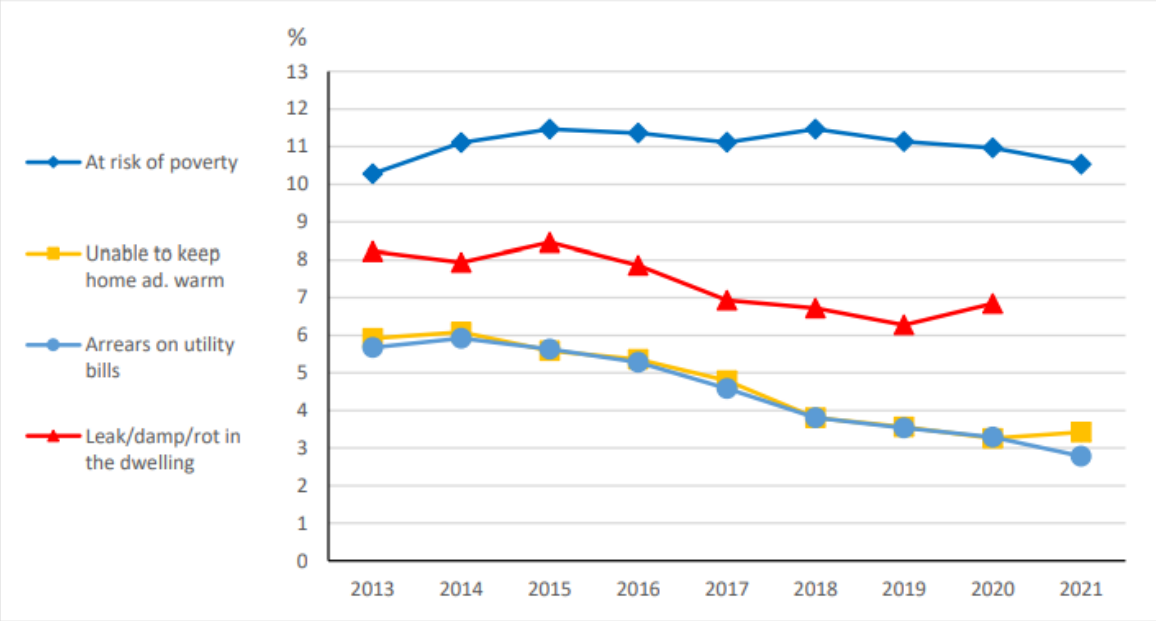

Figure 12 – Persistency rates for monetary poverty and energy poverty indicators, 2013-2021

Source: (Ozdemir & Koukoufikis, 2004, p. 15)

All the above proposed missing indicators definitions are available in the Appendix number 1.

2.5 Bridging Concepts to Practical Application

The literature review highlighted significant gaps in the current understanding and measurement of national well-being. These gaps, particularly in accounting for multidimensional indicators and their interplay, require a robust methodological approach to isolate the most influential factors. This understanding drives the rationale for our statistical analysis, aimed at simplifying complex indicator landscapes into actionable insights.

Building upon the comparative analysis of existing well-being dashboards and the identified gaps, our research moves to test the statistical relevance of proposed indicators. This ensures that the theoretical constructs derived from the literature review align with empirical evidence, allowing for the development of a practical, streamlined dashboard.

The findings from the literature emphasize the critical need for objective and subjective indicators to be integrated effectively. The data analysis phase is thus designed to validate these theoretical insights through statistical methods, enabling us to propose a model that reflects real-world applicability and relevance.

Chapter 3 –Data Analysis Results

Our systematic gap analysis revealed differences in the indicators used across existing models. This underscores the necessity of a statistical approach to identify and validate the indicators most significantly correlated with well-being. This transition marks the operationalization of our theoretical framework into measurable outcomes.

3.1 Indicator Preparation and Initial Analysis

3.1.1 Introduction

In this section we have evaluated all the indicators in the dashboard, both the ones retrieved from the OECD's How's Life database as well as the ones we've identified from the theoretical framework and introduced into the dashboard, and did a statistical descriptive analysis. The results are detailed in the number 4 of the Appendix.

The tool we've used for the data analysis section, SPSS, already automatically standardizes indicators whenever that is required for the statistical operation required, such as for the Principal Component Analysis (PCA). However, we have standardized the indicators in our DB and the comparison between the original values per country and the standardized indicators can be found in the number 5 of the Appendix.

We have applied statistical inference to evaluate how the data is distributed, and we end this section with a brief ranking analysis of the added indicators to the dashboard, both in terms of objective (context) indicators as well as subjective well-being indicators.

3.1.2 Statistical Inference - Context Indicators Histograms

We've selected some context indicators to evaluate how the data is distributed:

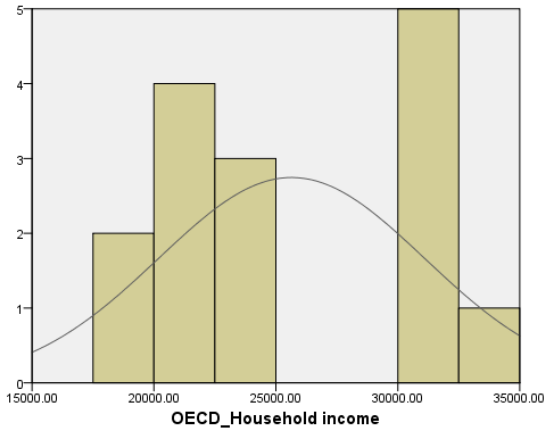

Figure 13 – Household Income Histogram

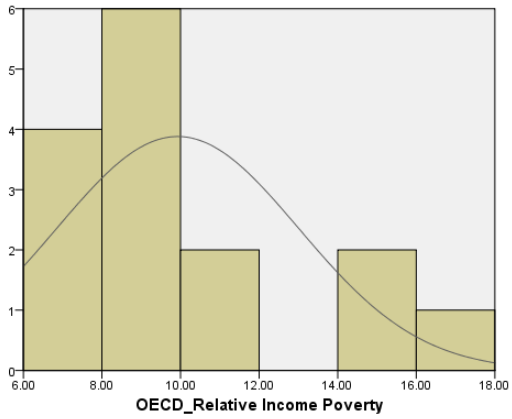

Figure 14– Relative Income Poverty Histogram

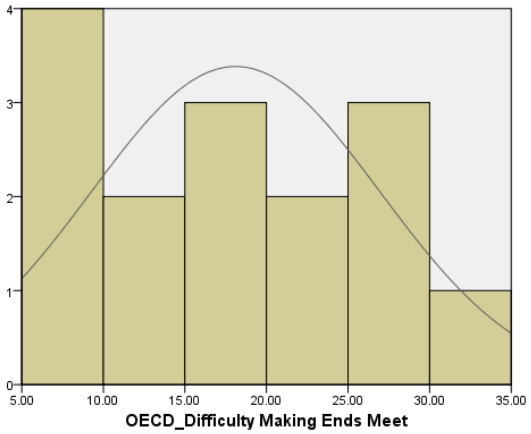

Figure 15 – Difficulty Making Ends Meet Histogram

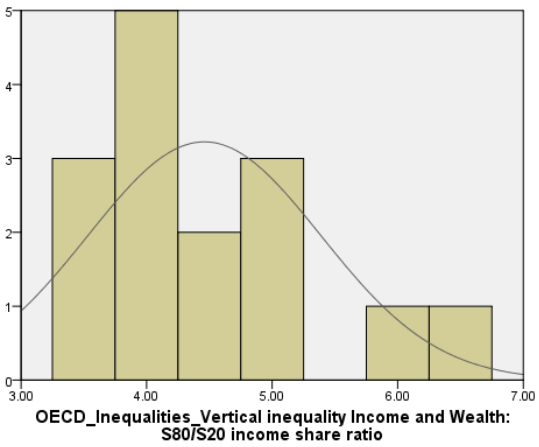

Figure 16– Income and Wealth Vertical Inequality S80/S20 Histogram

As we can see from the above, the distribution of the indicators is approximately normal and for the indicators Relative Income Poverty and Income and Wealth Vertical Inequality S80/S20 slightly skewed to the left.

3.1.3 Ranking Analysis - Proposed Indicators

3.1.3.1 Context Indicators

Analysing the ranking of some of the proposed indicators introduced in the well-being dashboard we observe for Stress Level (work related illnesses) that Switzerland has the lowest number of reported cases in the sample, while Denmark reports the highest number of cases:

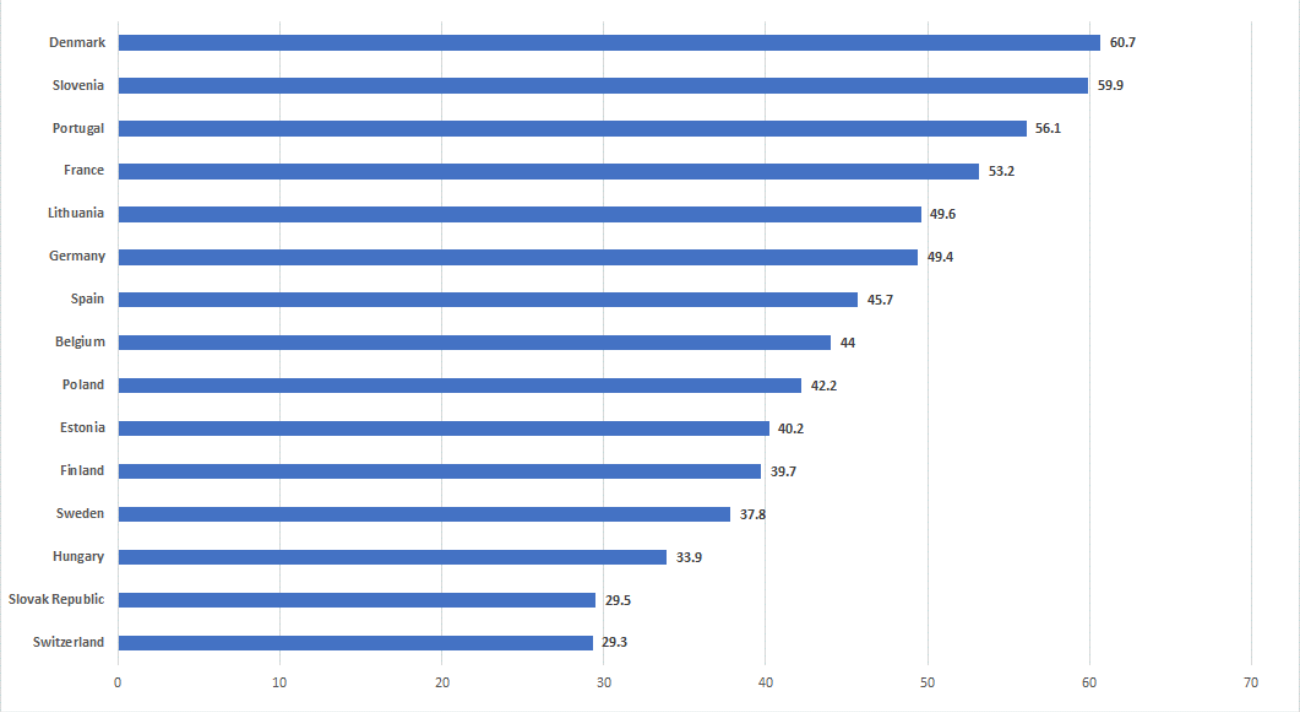

Figure 17– Stress Level Ranking

(Author's own creation)

Regarding the National Consumption of Antidepressants the ranking shows that Portugal is the biggest consumer, in line with historical data, while Hungary is the country depicting the lowest consumption in the sample.

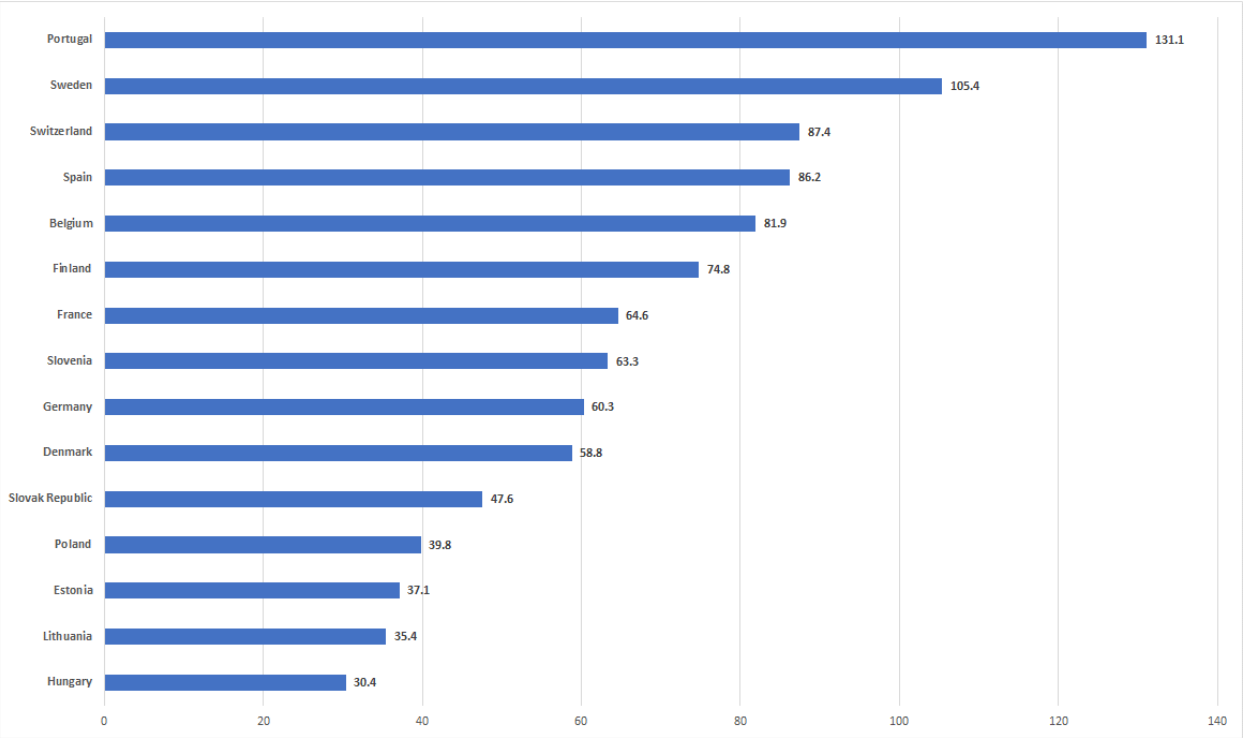

Figure 18 – Antidepressant Consumption Ranking

(Author's own creation)

Regarding Anxiolytic Consumption, Portugal depicts again the highest consumption while Germany reports the lowest annual consumption in the sample.

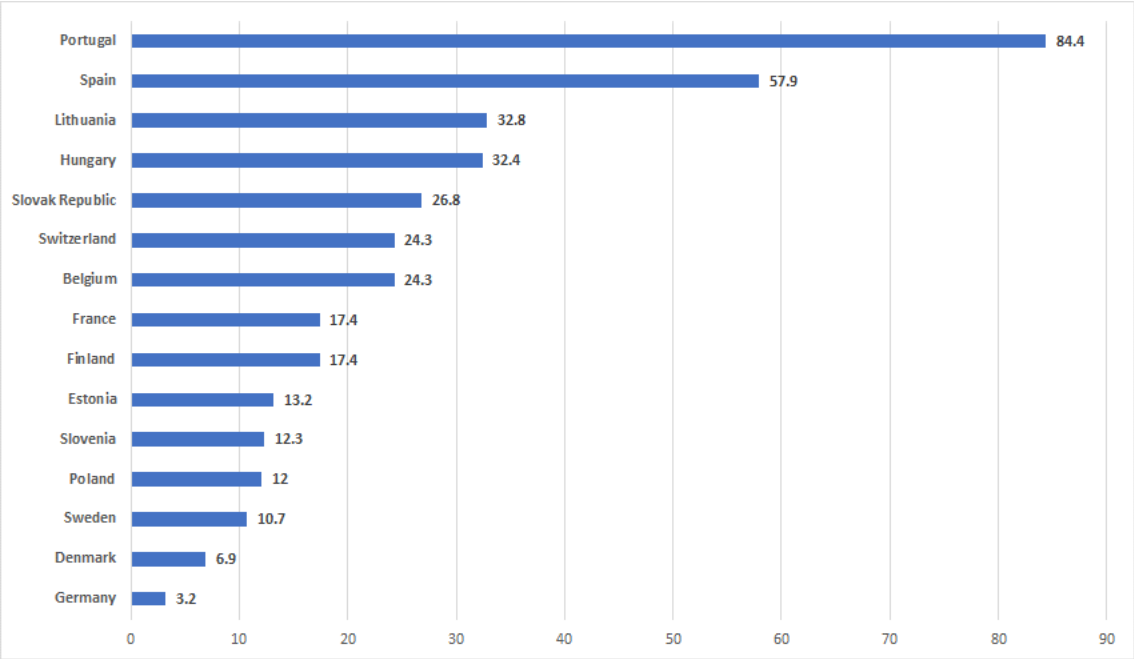

Figure 19 – Anxiolytic Consumption Ranking

(Author's own creation)

The variance to the national threshold in regards to the CO2 Emissions shows Poland is the biggest polluter while Lithuania is the lowest polluter in the sample.

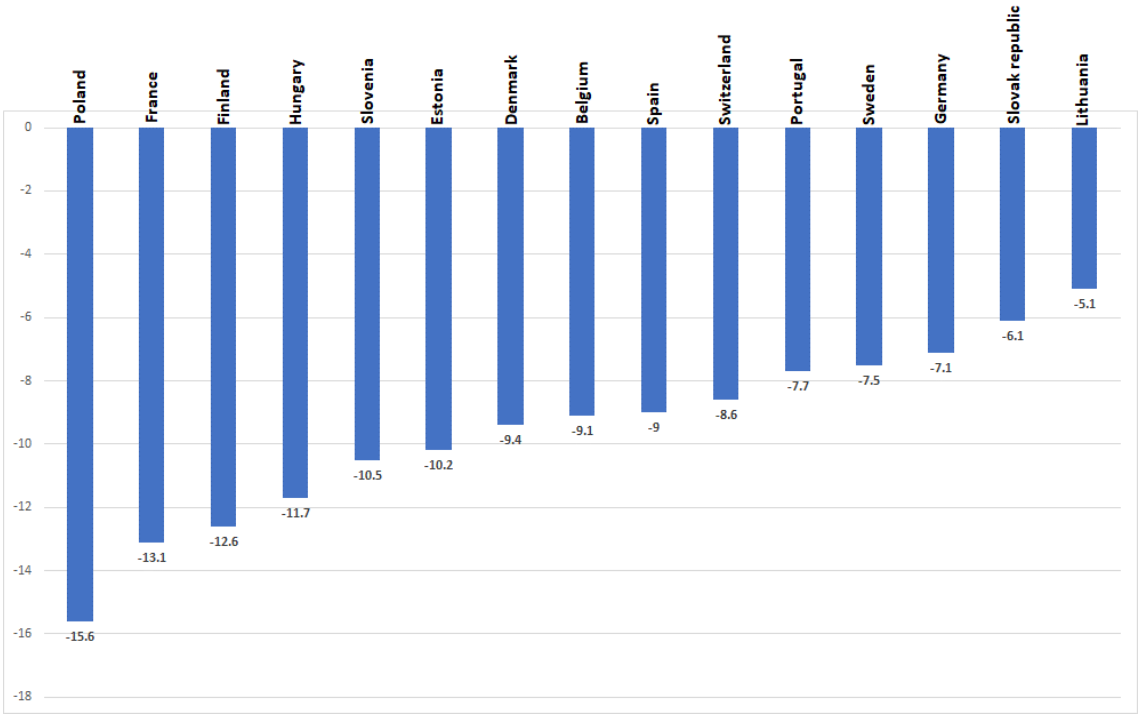

Figure 20 – CO2 Emissions, Variance to National Threshold Ranking

(Author's own creation)

3.1.3.2 Well-Being Subjective Indicators

Regarding subjective well-being indicators we can observe that in terms of Individual Value the ranking for the countries in the sample depicts Poland as the country with the biggest number of individuals feeling valued and Slovenia as the lowest:

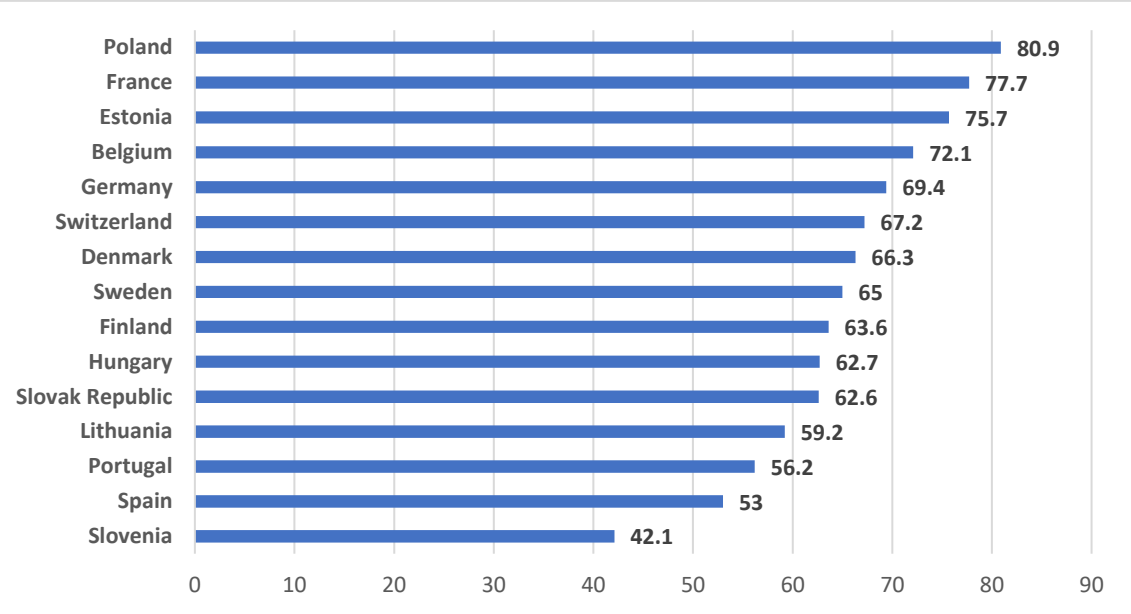

Figure 21– Individual Value Ranking

(Author's own creation)

In what concerns Trust in the Political Parties Denmark is the country in the ranking showing the highest level of trust within the sample, while Spain is the least trusting country in regards to political parties:

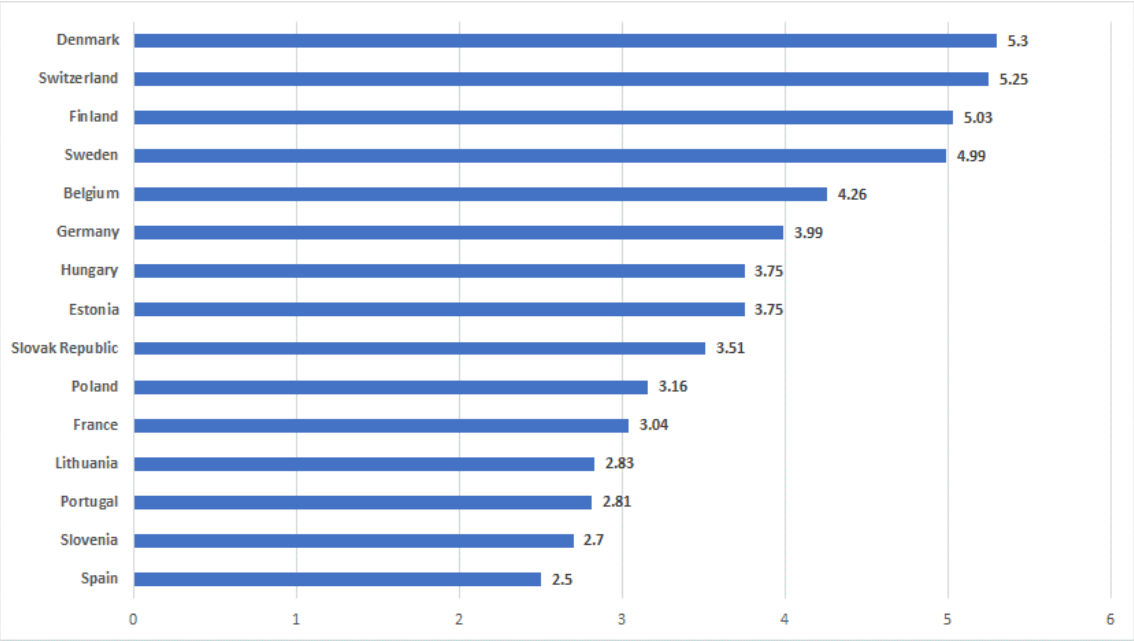

Figure 22 – Trust in Political Parties Ranking

(Author's own creation)

In the sample, the sense of Accomplishment is felt highest in the Slovak Republic and the lowest in Switzerland:

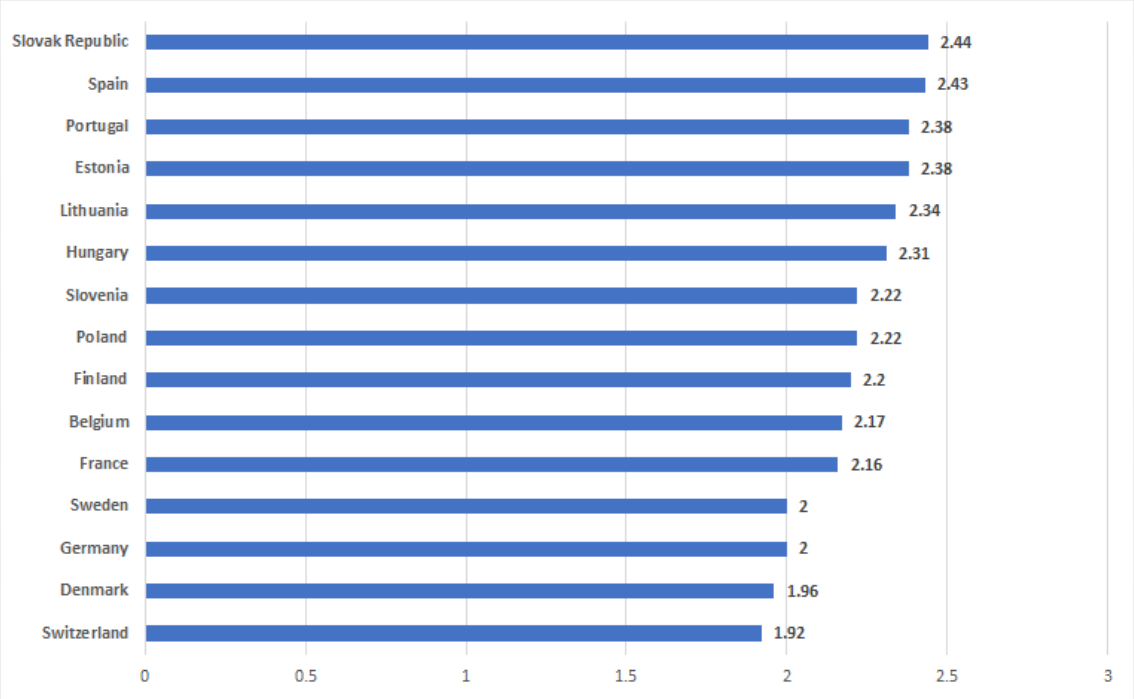

Figure 23 – Accomplishment Ranking

(Author's own creation)

3.2 Dimension Construction

In this section we will assess the possibility of creating dimensions by grouping related indicators.

This preliminary step will allow us to perform the Principal Component Analysis (PCA), with the aim of identifying the key components which statistically explain each dimension without significant data loss.

This procedure will help us to address our research question 2 and potentially simplify the overall proposed dashboard.

3.2.1 Dimension Creation

We performed several reliability tests for the potential creation of dimensions as a first step to simplify and streamline the full indicator landscape. The results of the reliability tests are depicted in Appendix number 6.

We were able to build 11 constructs, of which 4 are related to the dimension *Work and Job Quality* and 2 are related to the dimension *Work Environment and Conditions*. We weren't able to aggregate 24 indicators of the full dashboard as the reliability was below 0,5 in the Cronbach Alpha[16].

The dimensions created were the following:

- Work and Job Quality (1, 2, 3 and 4);
- Work Environment and Quality (Trust; Worked Hours and Inequality)
- Housing
- Work Life Balance
- Health
- Mental Health
- Knowledge and Skills

[16] Cronbach Alpha indicator informs about the reliability of a construct or a dimension (Forero, 2014). The indicator should vary between 0 and 1 and the reliability is better whenever the result is above 0,5 and closer to 1.

- Social Connections
- Civic Engagement
- Safety
- Subjective Well-Being

The Created Dimensions Table is available in Appendix number 7. These results are aligned with the literature review results.

3.2.2 Streamlining the Dashboard Dimensions

We have used the Principal Component Analysis (PCA) method in all the dimensions of the dashboard as a way to concentrate the data with irrelevant loss of information.

The PCA with varimax rotation[17] analysis results can be summarized as follows for the different dimensions:

As the creation of dimensions for *Work and Job Quality* resulted in 4 dimensions[18], we have repeated the PCA analysis for the Work and Job Quality extracted indicators in order to simplify further and the results are as follows:

[17] The varimax rotation method was chosen as it is the one which allows to minimize the number of variables with considerable weights in each of the dimensions (Marôco, 2021, p. 448)
[18] The PCA analysis results for each of the Work and Job Quality dimensions – 1, 2, 3 and 4 – are available in Appendix 7.1

Table 6 – Work and Job Quality Component Matrix

Component Matrix[a]		
	Component	
	1	2
ACP_WorkJob Quality 3_Long-Term Unemployment Rate Men	.930	-.281
ACP_WorkJob Quality 1_LongTerm Unemployment Rate	.906	-.366
ACP_WorkJob Quality 2_Employment Rate	-.824	.485
ACP_WorkJob Quality 4_Long Hours in Paid Work - Middle Aged	.764	.591
ACP_WorkJob Quality 1_Labour Market Insecurity	.379	.808
ACP_WorkJob Quality 2_Employment Rate Women	-.440	-.532
Explained Variance	48,15%	35,47%
KMO	0.508; p<0,001	
Extraction Method: Principal Component Analysis. a. 2 components extracted.		

The PCA analysis on the dimension *Work and Job Quality* with all the indicators extracted from the PCA revealed that the indicators *Long-Term Unemployment Rate Men* and the *Long-Term Unemployment Rate* explain 83% of the dimension.

We have applied the same method for the dimensions *Work Environment and Conditions*[19] and repeated the PCA analysis for the extracted indicators in order to simplify further and the results are as follows:

Table 7 – Work Environment and Conditions Component Matrix

Component Matrix[a]	
	Component
	1
ACP_WorkingConditions 1_ColleaguesTrust	.743
ACP_WorkingConditions 2_Paid Hours Worked	-.743
Explained Variance	55,18%
KMO	0,500; p<0,05
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

[19] The PCA analysis results for each of the Work Environment and Conditions dimensions – 1 and 2 – are available in Appendix 7.1

The PCA analysis on the dimension *Work Environment and Conditions* shows that the indicators *Colleagues Trust* and *Paid Hours Worked* explain 55% of the dimension.

The dimension *Housing* revealed the following PCA results:

Table 8 – Housing Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Poor households without access to basic sanitary facilities	.925
OECD_Overcrowding rate	.925
Explained Variance	85,59%
KMO	0,50; p<0,05
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension *Housing* shows that the indicator *Poor Households Without Access to Basic Sanitary Facilities* explains 85% of the dimension.

The dimension *Work Life Balance* shows the PCA results as follows:

Table 9 – Work Life Balance Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Women	.979
OECD_Satisfaction with time use_mean	.978
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Primary	.950
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Secondary	.932
OECD_Inequalities_Vertical inequality Worklife balance: Satisfaction with time use	-.909
OECD_Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Men	.907
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Old	.886
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Tertiary	.876
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Middle Aged	.834
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Young	.818
Explained Variance	82,52%
KMO	.809; p<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension *Work Life Balance* shows that the indicator *Inequality Satisfaction with Time Use - Women* explains 82% of the dimension.

For the dimension *Health* the results of the PCA are:

Table 10 – Health Component Matrix

Component Matrix[a]		
	Component	
	1	2
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Men	.986	-.075
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Women	.976	-.069
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Tertiary	.913	.331
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Secondary	.910	.130
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Primary	.885	-.370
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Old	.866	-.466
OECD_Perceived health_mean	.447	.178
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Young	.448	.833
Explained Variance	55,06%	29,13%
KMO	0,74; p<0,001	
Extraction Method: Principal Component Analysis. a. 2 components extracted.		

The PCA analysis on the dimension *Health* shows that the indicators *Inequality Perceived Health Men* and *Inequality Perceived Health Women* explain 84% of the dimension.

The dimension *Mental Health* shows the PCA results as follows:

Table 11 – Mental Health Component Matrix

Component Matrix[a]	
	Component
	1
Statista_Antidepressant consumption	.871
Statista_Anxiolytic drug consumption	.871
Explained Variance	75,80%
KMO	0,500; p<0,05
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension *Mental Health* shows that the indicator *Antidepressant Consumption per Year* explains 75% of the dimension.

For *Knowledge and Skills* 3 dimensions were created: 1 (*reading skills*), 2 (*maths skills*) and 3 (*science skills*). The results of each of these dimensions PCA Analysis are available in Appendix 7.1. We have repeated the PCA analysis for the *Knowledge and Skills* extracted indicators in order to simplify further and the results are as follows:

Table 12 – Knowledge and Skills Component Matrix

Component Matrix[a]	
	Component
	1
ACP_Knowledge and Skills_Science	.981
ACP_Knowledge and Skills_Math	.941
ACP_Knowledge and Skills_Reading	.941
Explained Variance	91,09%
KMO	0,684; p<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension *Knowledge and Skills* shows that the indicator *Knowledge and Skills in Science* explains 91% of the dimension.

For the dimension *Social Connections* we've split the construct into *Social Support* and *Personal Relationships*. For the *Social Support* the PCA results are:

Table 13 – Social Support Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Middle Aged	.991
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Men	.989
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Women	.975
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Old	.971
OECD_Inequalities_Horizontal inequality Education Social Connections: Social Support - Secondary	.970
OECD_Social support_mean	.933
Explained Variance	94,42%
KMO	0,761; p<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension *Social Connections*, for its construct of *Social Support*, shows that the indicator *Inequalities Social Support – Middle Aged* explains 94% of the dimension.

For the construct *Personal Relationships* under the *Social Connections* dimension, the PCA results are as follows:

Table 14 – Personal Relationships Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Satisfaction with personal relationships_mean	.996
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Men	.996
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Secondary	.987
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Women	.985
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Middle Aged	.954
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Tertiary	.948
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Primary	.948
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Old	.938
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Young	.883
OECD_Inequalities_Vertical inequality Social Connections: Satisfaction with personal relationships	-.730
Explained Variance	88,28%
KMO	0,735; p<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension *Social Connections*, for its construct of *Personal Relationships*, shows that the indicator *Satisfaction with Personal Relationships (Mean)* explains 88% of the dimension.

The dimension *Civic Engagement* depicts the following PCA results:

Table 15 – Civic Engagement Component Matrix

Component Matrix[a]	
	Component
	1
European Social Survey_Trust in the Legal System	.985
European Social Survey_Trust in the Polititians	.963
European Social Survey_Trust in the Polititcal Parties	.953
European Social Survey_Trust in the Police	.880
Explained Variance	89,50%
KMO	0,691; *p*<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension *Civic Engagement* shows that the indicator *Trust in the Legal System* explains 69% of the dimension.

The dimension *Safety* results from the PCA analysis are as follows:

Table 16 – Safety Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Inequalities_Horizontal inequality Education Safety: Feeling Safe at night - Secondary	.985
OECD_Feeling safe at night_mean	.983
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Old	.982
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Middle Aged	.979
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Women	.979
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Men	.972
OECD_Road deaths	-.758
OECD_Homicides	-.456
Numbeo_Crime rate	-.380

Component Matrix[a] (Cont.)	
	Component
	1
Explained Variance	74,30%
KMO	0,636; p<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension *Safety* shows that the indicator *Inequality Feeling Safe at Night - Secondary* explains 63% of the dimension.

For the dimension *Subjective Well-Being* we've split the construct into *Life Satisfaction + Accomplishment* and *Negative Affect + Lack of Physical Activity*. For the *Life Satisfaction* and *Accomplishment* the PCA results are:

Table 17 – Subjective Well-Being 1 Component Matrix

Component Matrix[a]		
	Component	
	1	2
OECD_Life satisfaction_mean	.993	-.015
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Men	.991	-.013
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Women	.988	-.017
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Middle Aged	.973	.189
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Old	.952	-.180
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Primary	.938	-.187
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Secondary	.935	.069
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Terciary	.877	.362
OECD_Inequalities_Vertical inequality Subjective Well-being: Life Satisfaction	-.820	.365
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Young	.730	.495

Component Matrix[a] (Cont.)		
	Component	
	1	2
European Social Survey_Feel accomplishment from what I do	-.324	.731
Explained Variance	64,75%	24,17%
KMO	0,772; *p*<0,001	
Extraction Method: Principal Component Analysis. a. 2 components extracted.		

The PCA analysis on the dimension *Subjective Well-Being 1*, for its *construct Life Satisfaction and Accomplishment* shows that the indicators *Life Satisfaction (Mean)* and *Inequality Life Satisfaction - Men* explain 88% of the dimension.

For the *Negative Affect and Lack of Physical Activity* construct under the *Subjective Well-Being* dimension the PCA results are:

Table 18 – Subjective Well-Being 2 Component Matrix

Component Matrix[a]		
	Component	
	1	2
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Women	.975	-.137
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Primary	.958	-.176
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Men	.958	-.045
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Middle Aged	.952	.094
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Secondary	.948	-.037
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Old	.943	-.284
OECD_Negative affect balance	.888	.312
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Terciary	.860	.326
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Young	.470	.798
WHO_insufficient physical activity	.592	-.631

Component Matrix[a]		
	Component	
	1	2
Explained Variance	57,22%	32,40%
KMO	0,591; p<0,05	
Extraction Method: Principal Component Analysis. a. 2 components extracted.		

The PCA analysis on the dimension *Subjective Well-Being 2*, for its construct *Negative Affect and Lack of Physical Activity* shows that the indicators *Inequalities Negative Affect - Women* and *Inequalities Negative Affect - Primary* explain 89% of the dimension.

Regarding the results of the PCA for the dimension *Subjective Well-Being* we've decided not to aggregate further the results, as it would be implying aggregating 2 opposite concepts, which theoretically and statistically would not be correct.

These results are aligned with the literature review results.

3.3 Indicators Relative Influence in Relation to Well-Being

In this analysis we looked at the correlation between the dashboard indicators – the ones resulting from the PCA and the ones that were not able to be aggregated such as the *Income and Wealth* related ones as well as the *Environment* ones – and the PCA extracted indicator from the *Subjective Well-Being* dimension *Life Satisfaction - Mean*, as the most representative one for Well-Being.

This analysis will allow us to understand which are the indicators which statistically influence well-being the most, be it positively or negatively.

We have used the Spearman ordinal correlation coefficient (Coelho et al., 2008, Chapter 34) for the analysis. The summary results are depicted in the table below.

Table 19 – Correlations Between Dashboard Indicators and Life Satisfaction – Positive Influence Summary Table

Correlations			
Dimension	**Indicator**		Life Satisfaction (Mean)
Social Connections	Personal Relationships	Pearson Correlation	.808**
		Sig. (2-tailed)	.000
		N	15
Social Connections	Social Support	Pearson Correlation	.702**
		Sig. (2-tailed)	.004
		N	15
Knowledge and Skills	Knowledge and Skills - Science	Pearson Correlation	.627*
		Sig. (2-tailed)	.012
		N	15
Income & Wealth	Vertical inequality Income and Wealth: S80/S20 income share ratio	Pearson Correlation	-.591*
		Sig. (2-tailed)	.020
		N	15
Environment	Blue Water (Variance to Threshold)	Pearson Correlation	.556*
		Sig. (2-tailed)	.031
		N	15

Table 20 – Correlations Between Dashboard Indicators and Life Satisfaction – Negative Influence Summary Table

Correlations			
Dimension	**Indicator**		Life Satisfaction (Mean)
Work Life Balance	Inequality Satisfaction with Time Use - Women	Pearson Correlation	.759**
		Sig. (2-tailed)	.001
		N	15
Work and Job Quality	Long Term Unemployment Rate - Men	Pearson Correlation	-.747**
		Sig. (2-tailed)	.001
		N	15
Safety	Inequality Feeling Safe Night – Secondary	Pearson Correlation	.679**
		Sig. (2-tailed)	.005
		N	15
Environment	Nitrogen Variance to threshold	Pearson Correlation	-.295
		Sig. (2-tailed)	.286
		N	15
Environment	CO2 Emissions Variance to threshold	Pearson Correlation	-.238
		Sig. (2-tailed)	.393
		N	15

From the tables 19 and 20 above we can clearly see that the indicator from the *Social Connections* dimension *Personal Relationships* has the biggest statistical importance to positively influence *Life Satisfaction* (0,808). Conversely, the *Work Life Balance* related Inequalities indicator, regarding the Satisfaction with Time Use for Women, is the indicator with the highest statistical importance negatively influencing well-being with 0,759. *Social Support* from the *Social Connections* dimension is the 2nd most positively influential indicator for well-being (0,702) while the indicator *Science*, from the *Knowledge and Skills* dimension, ranks 3rd with 0,627. The indicators Inequality in terms of Income and Blue Water from the dimension *Environment* are the next most positively influential indicators to increase well-being, ranking the 4th and 5th places respectively.

On the other hand, the *Work and Job Quality* indicator *Long-Term Unemployment Rate for Men* takes the 2nd place in terms of negative influence on well-being followed by the *Safety indicator Inequality Feeling Safe at Night – Secondary* and 2 Environment indicators – *Nitrogen* and *CO_2 Emissions*, ranking respectively the 3rd, 4th and 5th positions.

The full Correlations between Dashboard Indicators and Life Satisfaction table is available in Appendix 7.

3.4 The Search for a Well-Being Index

We've opted to complement our analysis by supporting ourselves in the creation of an index that could aid us in a simplified one glance country comparison.

It seems relevant to understand what the weights are of each one of the most relevant indicators influencing well-being, hence using the multiple linear regression analysis.

This analysis seeks to evaluate the functional relation in a model between the dependent indicator, and other independent indicator(s). As in this case we'll use more than one independent indicators, the model is called multiple linear regression analysis (Marôco, 2021, p. 662).

As such, we've constructed the following well-being equation (1):

Well-Being (*Life Satisfaction_Mean*) = β *Social Support* + α *Personal Relationships* + δ *Knowledge and Skills_Science* + θ *Vertical Inequality Income and Wealth_S80/S20 income share ratio* + Ω *Blue Water_Variance to threshold* + γ *Inequalities Satisfaction with Time Use_ Women* + μ *LongTerm Unemployment Rate_Men* + ϕ *Inequality Feeling Safe Night_ Secondary* + χ *Nitrogen_Variance to threshold* + λ *CO2 Emissions_Variance to threshold*

In order to evaluate if we could apply the Multiple Linear Regression analysis, we first did an exploratory evaluation by doing the linear correlation analysis between the

independent indicators and the dependent indicator *Life Satisfaction – Mean*. The results are provided in the Appendix number 7.

As all the independent indicators are correlated to *Life Satisfaction – Mean* we then proceeded to perform the Multiple Linear Regression Analysis.

The results can be summarized by the following table:

Table 21 – Multiple Linear Regression Determinant Factors for the Life Satisfaction – Mean Indicator

Life Satisfaction – Mean Determinant Factors (Multiple Regression – Enter Method)		
Independent Indicators	Beta Standardized Coefficients	
OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	-.727*	
Leeds-PB_Blue Water Variance to threshold	-.278*	
ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	.414*	
ACP_Social Connections_Social Support	-.866**	
ACP_Social Connections_Personal Relationships	.544**	
Leeds-PB_CO2 Emissions Variance to threshold	.172	
Leeds-PB_Nitrogen Variance to threshold	-.117	
ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men	.413**	
ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women	1.049**	
ACP_Safety_Inequality Feeling Safe Night - Secondary	.096**	
Adjusted R_2		0,700
F(10, 4)		4,271
*p < 0,05 ; **p < 0,001		

Consequently, we are now able to rewrite the well-being equation (1) as follows:

Well-Being (*Life Satisfaction_Mean*) = -0,866 *Social Support* + 0,544 *Personal Relationships* + 0,414 *Knowledge and Skills_Science* - 0,727 *Vertical Inequality Income and Wealth_S80/S20 income share ratio* - 0,278 *Blue Water_Variance to threshold* + 1,049 *Inequalities Satisfaction with Time Use_ Women* + 0,413 *LongTerm Unemployment Rate_Men* + 0,096 *Inequality Feeling Safe Night_ Secondary* – 0,117 *Nitrogen_Variance to threshold* + 0,172 *CO2 Emissions_Variance to threshold*

(Equation 2)

The analysis allows us to observe that the highest weights in explaining *Life Satisfaction - Mean* are *Inequalities Satisfaction with Time Use – Women* and *Social Support*.

However, and in order to overcome potential multicollinearity issues, given the low tolerance and high VIF (Variance Inflation Factor) values observed, we've opted to summarize the equation (2) doing the analysis focusing only on the positive impact independent indicators.

The results are depicted in the Appendix 9 and summarized in the table below:

Table 22 – Positive Impact Indicators Multiple Linear Regression Determinant Factors for the Life Satisfaction – Mean Indicator

Life Satisfaction – Mean Determinant Factors (Multiple Regression – Enter Method)		
Independent Indicators	Beta Standardized Coefficients	
ACP_Social Connections_Social Support	-.022	
ACP_Social Connections_Personal Relationships	.477	
ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	.320	
OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	-.288	
Leeds-PB_Blue Water Variance to threshold	.126	
Adjusted R^2		0.706
F(5, 9)		7.739
$p < 0,05$;		

Consequently, we are now able to rewrite the well-being equation (3):

Well-Being (*Life Satisfaction_Mean*) = β *Social Support* + α *Personal Relationships* + δ *Knowledge and Skills_Science* + θ *Vertical Inequality Income and Wealth_S80/S20 income share ratio* + Ω *Blue Water_Variance to threshold*

as follows (Equation 4): Well-Being (*Life Satisfaction_Mean*) = - 0,22 *Social Support* + 0,477 *Personal Relationships* + 0,320 *Knowledge and Skills_Science* – 0,288 *Vertical Inequality Income and Wealth_S80/S20 income share ratio* + 0,126 *Blue Water_Variance to threshold*.

Given the above findings we are now able to identify the quantitative influence of the independent indicators over well-being (Marôco, 2021, p. 667), *Life Satisfaction-Mean*, and affirm that *Personal Relationships* and *Knowledge and Skills_Science* have the highest weights.

These results are aligned with the literature review results.

3.5 Country Similarities Search

The cluster analysis is an exploratory analysis which allows for the grouping of subjects and/or indicators with the same homogenous characteristics (Marôco, 2021, p. 523). In this analysis the grouping is done through measures of similarity (or dissimilarity) allowing to infer that any observation belonging to a Cluster is similar to all the others belonging to the same Cluster (id.).

In this section we will investigate the similarities among the countries in the sample regarding the most statistically influential indicators upon well-being – both positively as well as negatively.

There are several methods to measure the differences between the elements. For the way in which the "distances" between elements of the sample are measured,

the Squared Euclidean Distance was used. This metric measures the length of the line between two observations in a *p*-dimensional space (Marôco, 2021, p. 525) and it is the one used as default in the tool which supported this research (id. p. 526).

For the method of grouping the sample elements into clusters, the Ward's Method was used, which allows for retaining the Clusters, among all possible clusters, with the lowest sum of squared errors and provides a clearer cluster separation (id. p. 531).

In order to do the Cluster Analysis we've opted to investigate the relationship between pairs of indicators resulting from the PCA and the ones which have demonstrated to bring higher influence in terms of well-being.

We will investigate the Cluster formation of the combination of Long-Term Unemployment Rate for Men and Life Satisfaction - Mean, Personal Relationships and Life Satisfaction - Mean and finally the Inequality Feeling Safe at Night and Life Satisfaction - Mean.

For all the indicators evaluated, 2 clusters were formed.

Using the Ward's cluster method and the Squared Euclidean Distance interval, the consequent cluster analysis results are depicted in the dendrograms below:

3.5.1. Long-Term-Unemployment Rate for Men and Life Satisfaction:

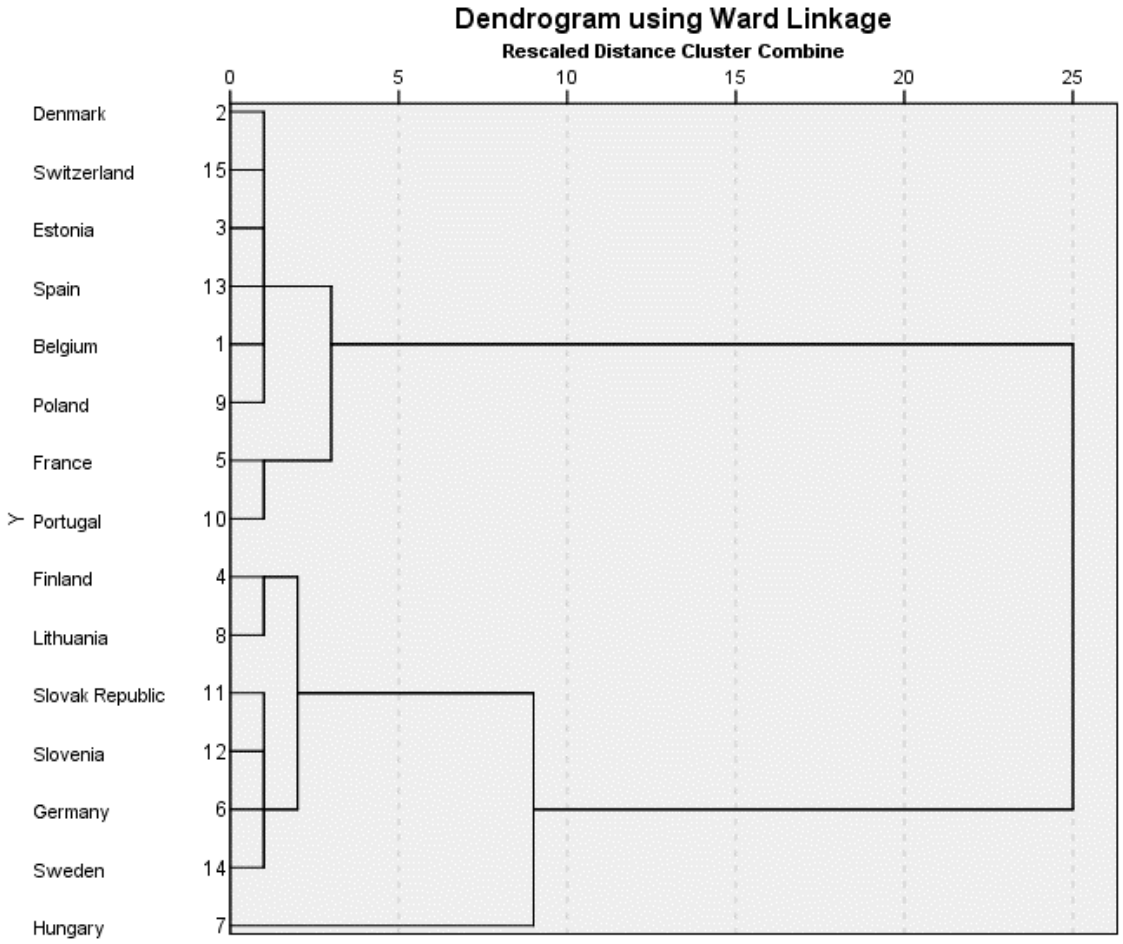

Figure 24 – Long-Term-Unemployment Rate for Men and Life Satisfaction Dendrogram

It is recommended the cut of the dendrogram to be done between the interval of 10 and 15, thus, the dendrogram allows to safely choose 2 clusters. The clusters will be summarized next.

3.5.2 Personal Relationships and Life Satisfaction:

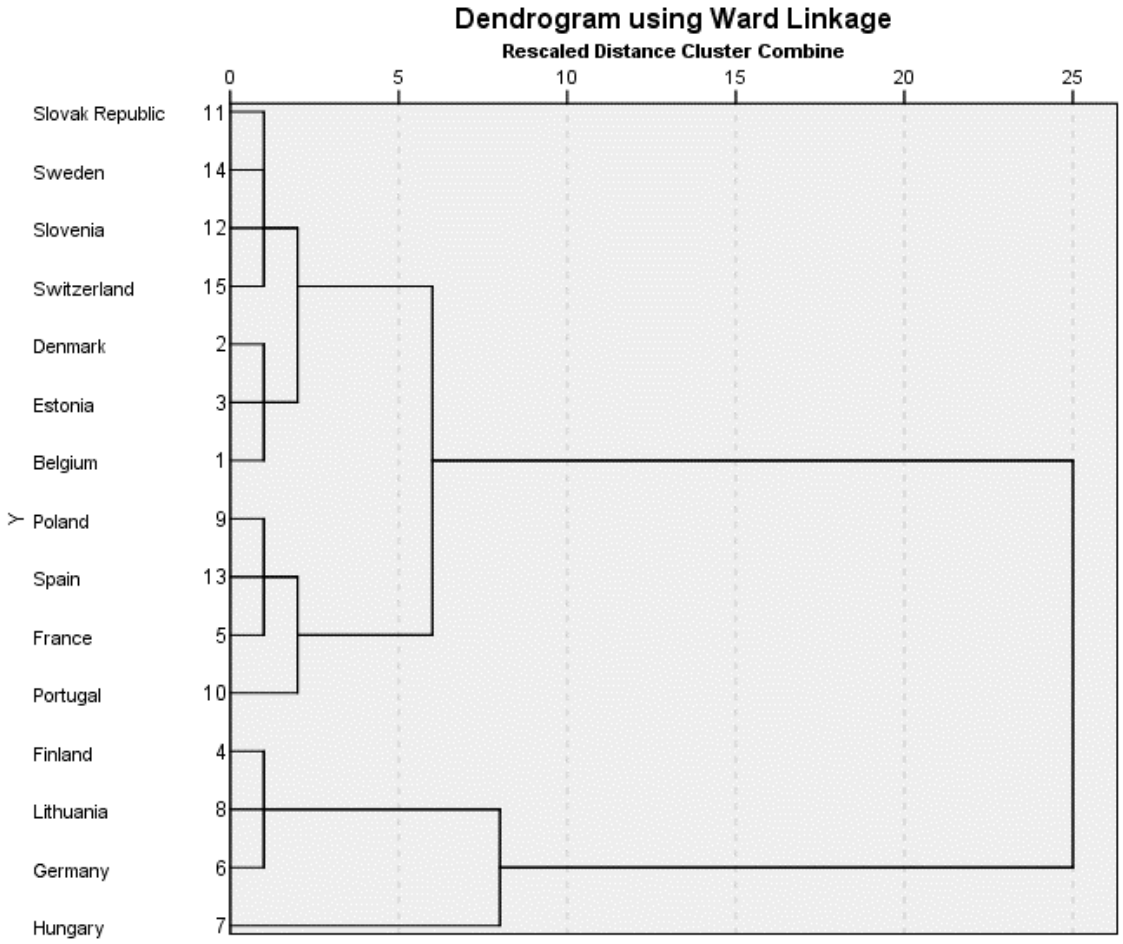

Figure 25 – Personal Relationships and Life Satisfaction Dendrogram

The dendrogram allows to safely choose 2 clusters. The clusters will be summarized next.

3.5.3 Feeling Safe When Walking Alone at Night and Life Satisfaction:

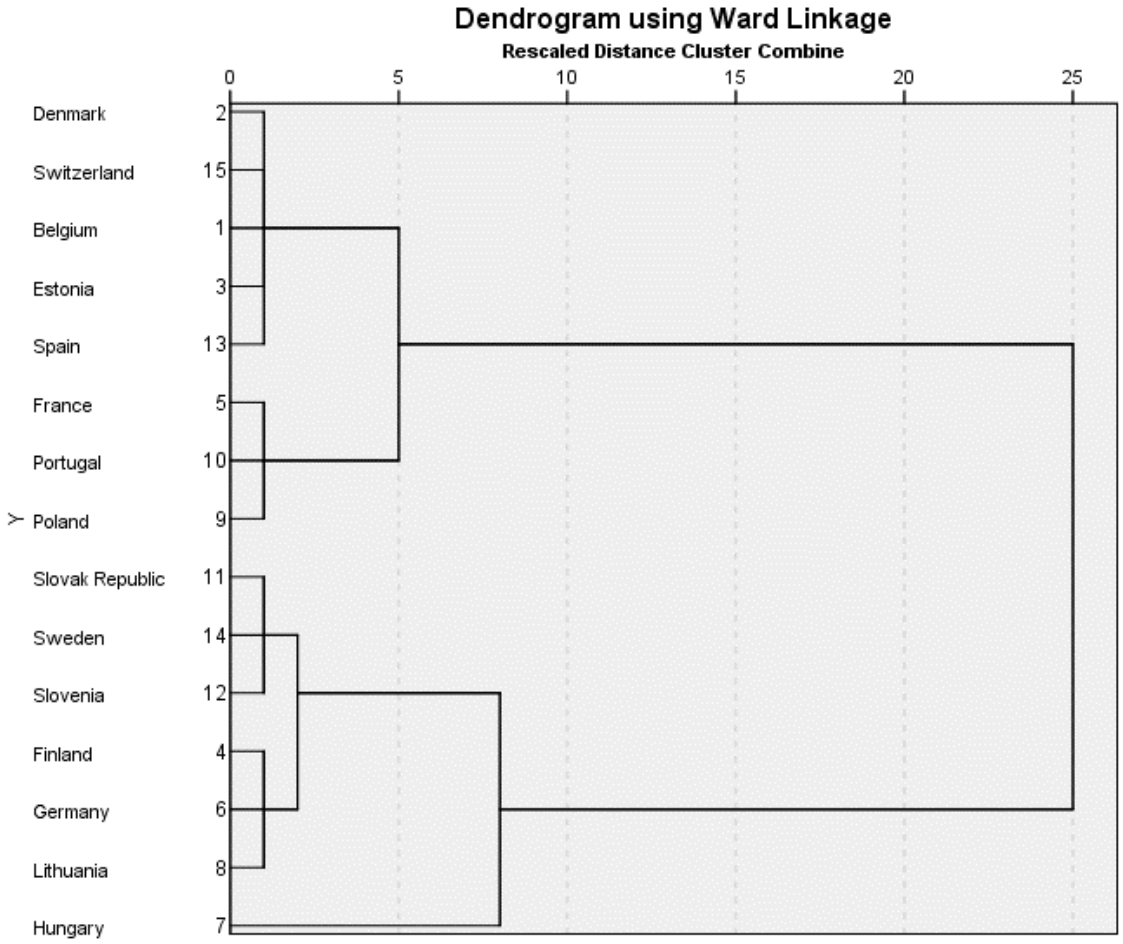

Figure 26 – Feeling Safe when Walking Alone at Night and Life Satisfaction Dendrogram

The dendrogram allows to safely choose 2 clusters. The clusters will be summarized next.

Table 23 – Cluster Split per Indicators Considered

Cluster Type	Cluster 1	Cluster 2
Long-Term-Unemployment Rate for Men and Life Satisfaction	Denmark, Switzerland, Estonia, Spain, Belgium, Poland, France, and Portugal	Finland, Lithuania, Slovak Republic, Slovenia, Germany, Sweden, and Hungary
Personal Relationships and Life Satisfaction	Slovak Republic, Sweden, Slovenia, Switzerland, Denmark, Estonia, Belgium, Poland, Spain, France, and Portugal	Finland, Lithuania, Germany, and Hungary
Feeling Safe when Walking Alone at Night and Life Satisfaction	Denmark, Switzerland, Belgium, Estonia, Spain, France, Portugal, and Poland	Slovak Republic, Sweden, Slovenia, Finland, Germany, Lithuania, and Hungary

The bigger cluster is Cluster 1, gathering most of the countries, in all the indicators. Denmark, Switzerland, Estonia, Spain, Belgium, Poland, France, and Portugal are always in Cluster 1 regardless of the indicator. Likewise, Cluster 2 always has the countries Finland, Lithuania, Germany, and Hungary regardless of the indicator.

Regarding the *Long-Term-Unemployment Rate for Men* and *Life Satisfaction - Mean* the country cluster split can easily be explained by the indicator *Long-Term-Unemployment Rate for Men* as for all the countries depicted in Cluster 1 the indicator results are negative while in Cluster 2 the values are positive.

In fact, when looking into the Long-Term Unemployment data for these countries we can clearly see similarities (Cluster 1 countries selected in colour I the following figure 27):

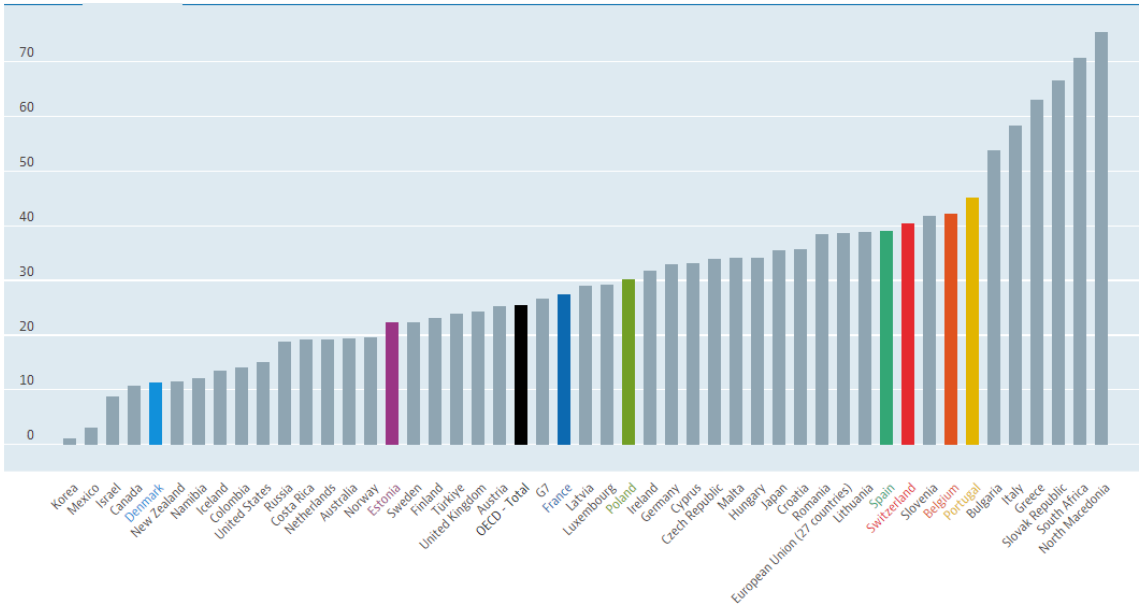

Figure 27 – Long Term Unemployment Rate 2018 2022

Source: (OECD, 2023a)

Regarding the *Feeling Safe when Walking Alone at Night* and *Life Satisfaction - Mean* the country cluster split is not so obvious from a data perspective, as the values vary significantly within the Clusters, and our indicator resulting from the PCA analysis in fact refers to the resulting *Inequalities of Feeling Safe when Walking Alone at Night*. However, when we look at the indicator *Feeling Safe when Walking Alone at Night* for all the countries depicted in Cluster 1, we see similarity groups:

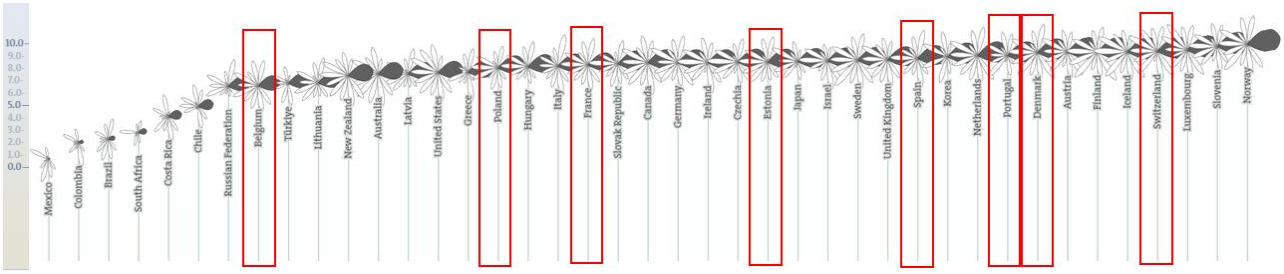

Figure 28 – Safety OECD Better Life Index

Source: (OECD, n.d.-c)

Chapter 4 – Literature Review Discussion

4.1 Well-Being as the Anchoring Concept

We summarized different concepts which define and measure happiness and well-being. We discussed the root causes which make them differ among themselves and we listed how they differ. It is necessary to select one of the concepts upon which we will be basing our research providing the rationale of why this one is chosen in detriment of the others.

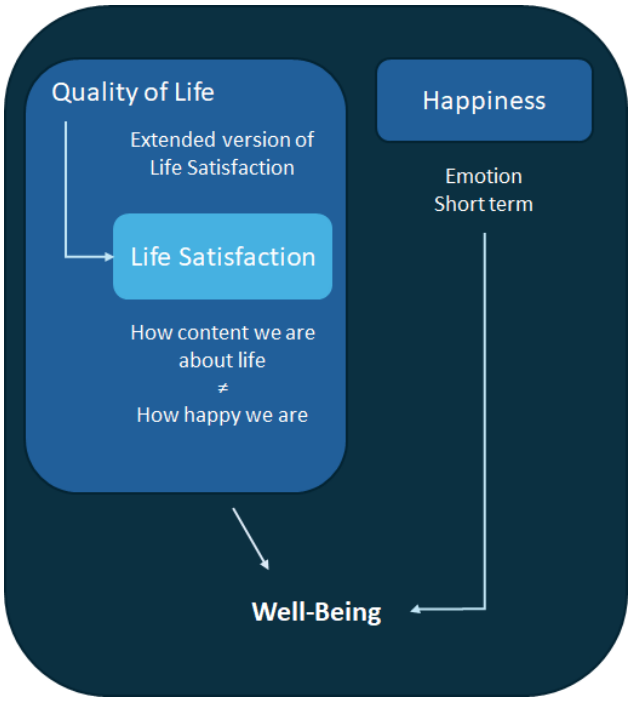

Figure 29 – Life Satisfaction, Happiness, Quality of Life, Happiness and Well-Being Interchangeable Use and Definitions Overlaps

(Author's own creation)

Life-satisfaction seems a more restricted and narrowed concept in comparison to well-being, as it translates how content we are with our life at a given point in time, but it does not tell us how good we feel overall. Feeling good about ourselves encompasses a series of domains, out of which some we can influence or control directly, and others that are out of our direct control, that are structural, depend on the context we are in.

Lyubormisky's much argued happiness pie model (Sonja Lyubomirsky, 2008, p. 39) points in that direction, splitting the determinants of individual happiness into intentional activity, the aspects under our control, weighing 40%, circumstances, referring to aspects we don't control such as living conditions or health, weighing 10%, and the set point referring to the genetic predisposition for happiness, weighing 50% (id. pp.39-53). Although the model raised a considerable amount of discussion regarding the weights for each of the pie slices, the individual determinants were not targeted in the discussions.

We agree with the neuroscientists in what regards happiness as a concept, classified as an emotion (Barrett, 2017; Damásio, 2012; Jawer & Micozzi, 2009; LeDoux, 1996), hence a short term feeling, and with the philosophers who, as Aristotle, argue that eudaimonia is the type of happiness to be pursued, relating it to a set of values and a more sustainable and long term effect (Aristotle, 1999).

QoL in the extended version includes life satisfaction and therefore aims to group objective and subjective dimensions. However, we argue that the naming etymology points to a set of conditions that provide quality to one's life and not necessarily what makes an individual happy or content. If this is the case, then QoL is a part, a sub-set, of the overall well-being.

Well-being on the other hand is considered by many authors an overarching concept, a broader construct entailing objective and subjective well-being, which is to say that it entails objective and subjective measures, comprising personal evaluations and context conditions. It relates to a long-term effect and the sustainability of it across time.

Therefore, we'll opt to select well-being as the concept for this research as it is the most robust one, considering the theoretical framework we are challenging and what we are looking for to test.

Hence, and for the purpose of the current research, we will be considering well-being as the anchoring concept, defined as a construct, entailing 13 dimensions, for

which 142 indicators will attempt to translate the dimensions, made up of objective[20] and subjective[21] measures. Well-being is then understood as a comprehensive construct, for which objective and subjective dimensions need to be jointly considered, aiming to translate the result of the individual perception of the self-emotions, fulfilment and contentment about their own life, and the evaluation' of the context in which they are inserted. Well-being will be higher whenever the sense of contentment is high and the context conditions are good, lower when the sense of contentment or fulfilment is low or non-existent and the context conditions are bad.

4.2 National Well-Being Analysis: A Conceptual Model Proposal

We realised that according to the different sciences looking into well-being, the key indicators differed, much due to the context in which the sciences were looking into well-being - some more focused on the individual level, some more concerned from an aggregated and societal level.

This analysis made us deduce the stratified and layered analysis we would have to consider when deep diving into well-being, if we wanted to evaluate the national and aggregated impact of the different well-being indicators from a national perspective. This made us came up with a proposed conceptual model of how we should investigate well-being, considering the different layers it entails.

We believe that well-being needs to be considered in a comprehensive manner, for which different levels and analytical perspectives need to be adopted.

Researching well-being at a national level drove us to elaborate a few assumptions. Well-being is mostly an individual perception and consideration. Once we aggregate individual perceptions we can consider it at a societal level.

[20] Measurements for which the data is not subjected to feelings or opinions, and come mainly from administrative data (income, education or health) or survey data (as in a census) (Oman, 2021, pp. 42, 70).

[21] Measurements whose outcome results of individual perceptions, assessments and evaluations and self-reported results, typically achieved through questionnaires and surveys.

So this means we have at least 2 layers of well-being that are inter-related.

Figure 30 – Graphic representation of inter-relationship between individual well-being and aggregated well-being

(Author's own creation)

Considering the environmental risks the planet is facing, such an analysis would be incomplete without considering environmental sustainability, in line with the practice that is being followed by most available well-being indexes and dashboards. We also assumed that the environment plays an important role in well-being as humanity depends on it to survive, hence, an additional ring of inter-relations had to be added.

As depicted in figure 31, we argue this dimension should be constraining the model, much in line with Raworth's case (Raworth, 2017b) for which we will discard the environmental indicators the existing indexes and dashboards apply, and instead adopt a model comprising environmental national thresholds (Steffen et al., 2015), allowing us to evaluate each country sustainability performance.

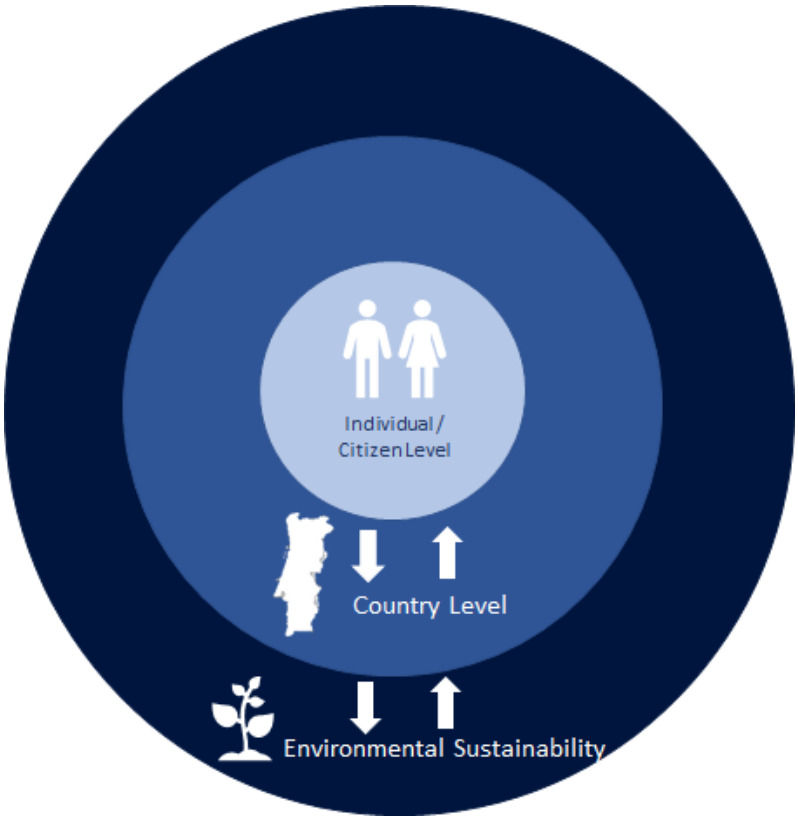

Figure 31 – Graphic representation of inter-relationship between individual well-being aggregated well-being and environment

(Author's own creation)

Additionally, we wondered if we could in fact keep the divisive nature of well-being from the individual perception, mostly focused on personal relationships, positive affect and time use, from the time we spend working, which is a non-neglectable portion of our lifetime. As human emotions and perceptions are not possible to freeze depending on the context, personal life and professional life, and that in fact derive from the whole life experience, we also assume that the professional context and how individuals feel in the workplace also interacts with individual' well-being, thus all the other well-being layers.

In agreement with the existing indexes and dashboards, we consider that the individual conditions which promote well-being need to be taken into account but it seems relevant to investigate whether organizational well-being, a missing dimension in the existing indexes and dashboards, also needs to be taken into account, as on average

a citizen is expected to work 45%[22] of their time per day (OECD, 2024), in paid or unpaid activities. As we will see in detail below, we will discuss which indicators may explain this dimension and help to measure it.

Hence, we inferred a conceptual model as follows:

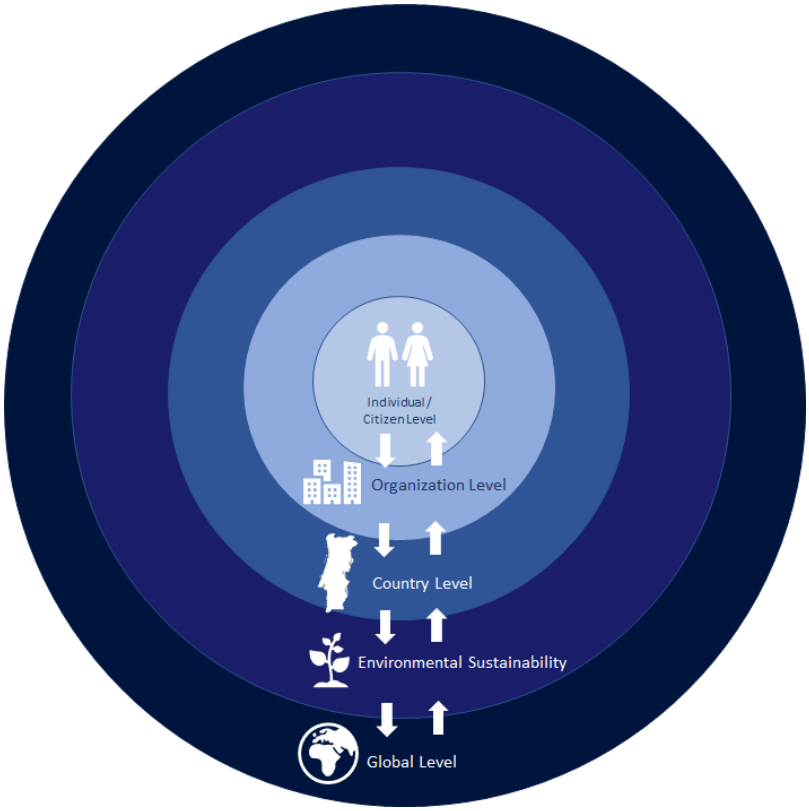

Figure 32 – Conceptual model depicting the inter-relationship between well-being layers

(Author's own creation)

The outer layer referred to as the Global Level in the model above stands for the level in which the country comparison within this model, considering all the inner layers, occurs.

The central problem then becomes in understanding what does well-being entail, i.e. what are the items that fulfil each of the conceptual model layers?

[22] Value extracted from OECD Time Use as an average of paid and unpaid work of all the countries in the DB.

Consequently, and complementary problems arise from the former: from the full well-being landscape items, which are the ones more relevant and influential in driving and improving overall well-being? We argue this is an important finding as the existing dashboards or indexes do not point to potential answers, which brings increased complexity to policy makers in prioritization choices, national budget distribution and allocation.

In order to tackle the complexity of the relationships between the different layers we needed to gather indicators and dimensions that could be representative of each layer. The approach we needed to follow would have to start from a broad and more generic well-being related indicator landscape, to a more narrow and statistically relevant well-being indicator landscape, for which we will support ourselves in the statistical outcomes of the Principal Component Analysis (PCA).

4.3 Index or Dashboard? Choosing the Measurement Tool

As we started unfolding the related literature for the review, we came across different ways countries and supra-national organizations were measuring well-being, some preferring indexes and others preferring dashboards. We came to the realisation that as well on this topic we needed to choose what the best approach would be and why.

Having a common index or dashboard, applicable to all the countries, would allow us to standardize the approach and establish the needed comparisons, with an in depth and detailed view on the asymmetries, enhancing public and social policy decision making.

While different dashboards and indexes persist, comparisons will be hard to establish, as we can see from figure 30 below, as we will end up comparing contexts based upon different measurements and dimensions:

World Hapiness Report 2018	OECD – Better Life Index 2018	Social Progress Index 2017
Finland	Norway	Denmark
Norway	Denmark	Finland
Denmark	Australia	Iceland
Iceland	Sweden	Norway
Switzerland	Canada	Switzerland
Netherlands	Switzerland	Canada
Canada	Iceland	Netherlands
New Zealand	USA	Sweden
Sweden	Finland	Australia
Australia	Netherlands	New Zealand

Figure 33 – Comparing Table among the Indexes World Happiness Report 2018, Better Life Index 2018, and Social Progress Index 2017 for the Nordics Countries

Source: (Andreasson, 2018, p. 13)

Furthermore, relying in one single value resulting of a (composite) index will hardly be an accurate portrait of a country' health and performance (Arrow et al., n.d.; Costanza et al., 2009; Milena & Graham, 2020, p. 21; OECD, 2018, p. 11), in line with OECD's recommendations, and if the focus is shifted towards comprising well-being, supporting on big data should be accounted for (OECD, 2018, p. 11).

The question then becomes how big should the dashboard become? Until the size of the dashboard is not agreed, we agree with Stiglitz' analogy with the car dashboard (Gertner, 2010, p. 14; OECD, 2018, p. 13) - it should be big, as long as all the information can be viewed.

For this reason, and to deep dive into well-being, following the literature review and understanding all that well-being entails, we have chosen to follow the dashboard approach. Additionally, to the reasoning we presented above, our decision is due to mainly 4 arguments:

- Following the recommendations resulting out of the Conference Beyond GDP: Measuring progress, true wealth and the well-being of nations (European Union, 2007, p. 128), Costanza et. al. recommendations (Costanza et al., 2009), the CMEPSP (J. E. Stiglitz et al., 2009), being put into practice by OCDE through the How's Life report (Helliwell, 2003; OECD, 2020), further reinforced by the 2018 Stiglitz et al. publication (J. E. . Stiglitz et al., 2018)
- The ability to update the indicator framework with the latest inputs from the theory related to well-being
- To allow for the adoption of a a procedural view, as recommended by Frey and Stutzer (Frey & Stutzer, 2010) in terms of policy definition, and
- Build the most complete well-being indicator related landscape as possible, to be able to understand, by streamlining and funnelling the indicators, which are the ones most relevant to explain well-being.

This choice will, however, bring additional problems with the statistical analysis as the probability of having higher correlations among the indicators also increases. We will have to rely on the statistical analysis methodology, in particular the principal component analysis, to understand which are the indicators or dimensions which by large explain well-being and discard the other ones providing marginal or insignificant statistical contributions (Marôco, 2021, pp. 433–436).

Supported on the statistical analysis we'll be able to understand whether any added indicators and dimensions are in fact statistically relevant to explain well-being, and which are the ones that are more statistically relevant to drive well-being at a country level, aiding policy makers to prioritize policies and budget.

4.4 A Proposal for a National Well-Being Measurement Model

Given the results of the PRISMA analysis and the gap analysis we were able to conduct, and considering the option of following the dashboard approach, we can now clearly identify the postulates for the research, driving us toward testing the conceptual framework, as depicted below:

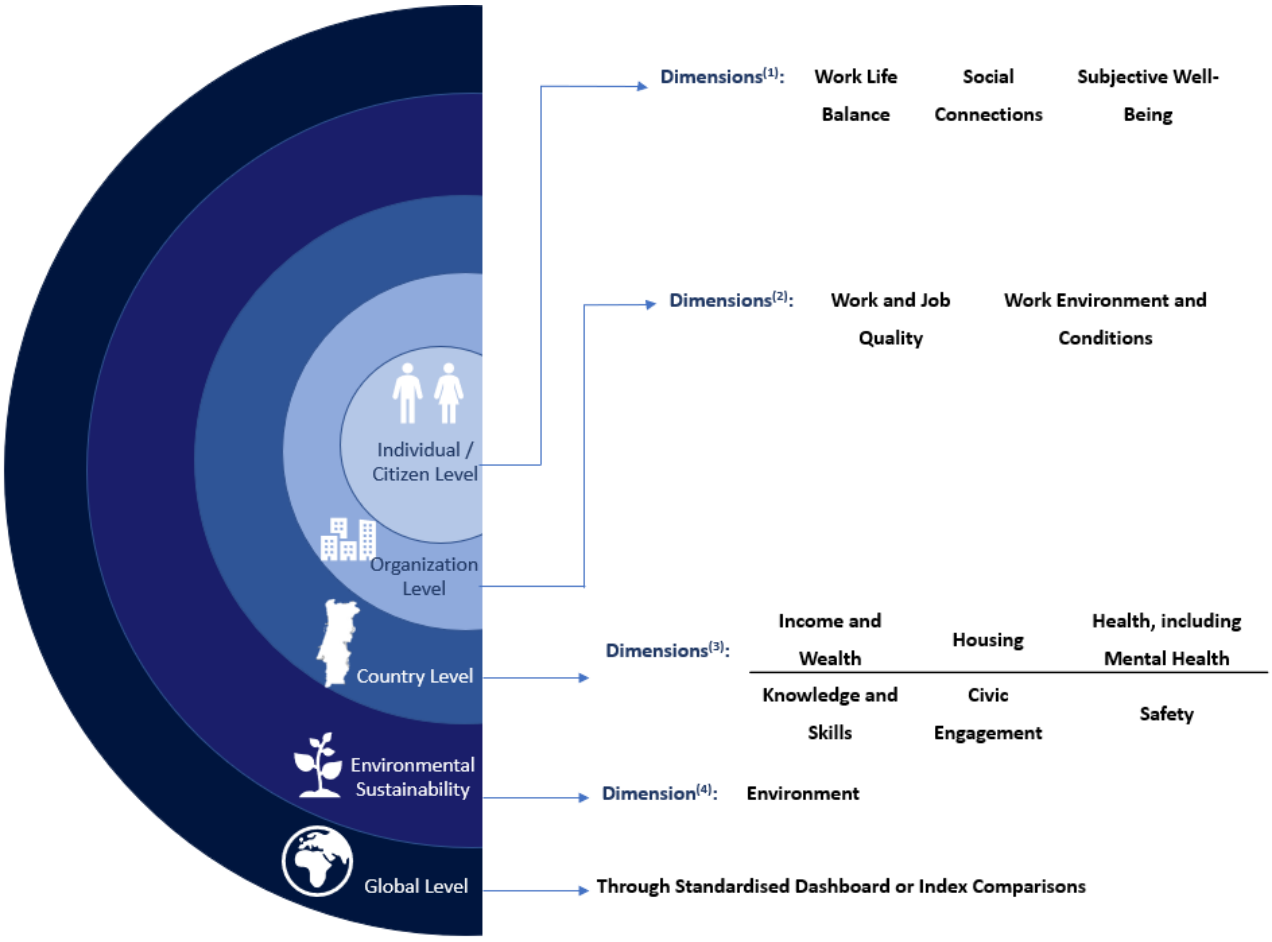

Figure 34 – Relationship between the Conceptual Model and the Dimensions

(Author's own creation)

(1) – Individual Level:

Dimensions:	Work Life Balance	Social Connections	Subjective Well-Being
Indicators:	Satisfaction with time Use	Social Support	Life Satisfaction
	Inequalities	Satisfaction with Personal Relationships	Negative affect Balance
		Inequalities	Physical Activity
			Sense of Accomplishment
			Inequalities

(2) – Organisation Level:

Dimensions:	Work and Job Quality	Work Environment and Conditions
Indicators:	Employment Rate	Paid Hours
	Gender Wage Gap	Paid and Unpaid Working hours (includes care givers, housework, etc.)
	Long-term Unemployment Rate	Company engagement
	Labour Market Insecurity	Colleagues trust
	Youth not in employment, education or training	Hierarchy trust
	Long hours in paid work	Turn-over
	Earnings	Stress level (Work Related Illnesses)
	Inequalities	Flexibility (time off, medical appointments, remote work; working hours, etc.)
		Individual value (self perception of how much the institution values the individual)
		Inequalities

(3) – Country Level

Dimensions:	Income and Wealth	Housing	Health	Knowledge and Skills	Civic Engagement	Safety
Indicators:	Household income	Overcrowding rate	Life expectancy at birth	Student Skills (reading);	Trust in the Legal System	Homicides
	Relative Income Poverty	Housing affordability	Perceived health	Student Skills (math);	Trust in the Police	Feeling safety when walking alone at night
	Difficulty Making ends Meet	Housing cost overburden	Disability adjusted life years (DALY)	Student Skills (science)	Trust in the Politicians	Road deaths
	Inequalities	Poor households without access to basic sanitary facilities	National consumption of anxiolytics (per year)[23]	Inequalities	Trust in the Political Parties	Crime rate
		Households with internet access at home	National consumption of antidepressants (per year)[24]		Corruption	Inequalities
		Energetic Poverty	Number of professionals[25]			
		Inequalities	Inequalities			

[23] Part of the sub-dimension Mental Health
[24] Part of the sub-dimension Mental Health
[25] Part of the sub-dimension Mental Health

(4) – Environmental Sustainability

Dimension:	Environment
Indicators:	CO_2 Emissions (variance to threshold)
	Phosphorus (variance to threshold)
	Nitrogen (variance to threshold)
	Blue Water (variance to threshold)
	eHANPP (variance to threshold)
	Ecological Footprint (variance to threshold);
	Material Footprint (variance to threshold);

The Global Level is the outcome of the scaling of the dashboard operationalization for any given country. Once the conceptual framework is tested, a comparison between different countries data for each of the dimensions and indicators will be possible, given that the same dimensions and indicators are being used and follow the same standardized methodologies in terms of data collection. The Global Level can also be attained through the comparison of an index resulting of the above proposed dashboard.

The conceptual framework will work as a baseline for the development of our research, through the bridging of the conceptual layers with the dimensions that characterize each of the layers and respective indicator landscape.

The dimensions we have established follow the OECD grouping and methodology (OECD, n.d.-a, 2020) except for the ones we are proposing and adding to the dashboard – dimensions *Working Environment and Conditions* and the sub-dimension *Mental Health* (as part of the Health dimension).

The dimension *Working Environment and Conditions* is the outcome of the grouping of indicators which, according to the theoretical framework, seem relevant to evaluate how individuals perceive and evaluate their well-being in the working

environment. The indicators we have considered for this dimension are *Paid Hours*, *Paid and Unpaid Working Hours* (including housework, care givers, etc.), *Company Engagement*, *Colleagues Trust*, *Hierarchy Trust*, *Stress Level*, *Flexibility of Time* (flexibility in scheduling time off, attending medical appointments, doing remote work, etc.), *Individual Value* (self-perception of how much the institution values the individual) and *Inequalities in the Working Environment* (relating to gender only as no additional inequality related data was available).

The sub-dimension *Mental Health* results on the grouping of available objective indicators which can portray the status of a country's mental health – *Hours of Sleep*, *Burn Out* and *Stress Related Hospital Occurrences*, *Number of Psychiatric and Psychology Consultations Per Year*, the *Yearly Consumption of Anti-Depressants*, the *Yearly Consumption of Anxiolytics* and the *Number of Active Professionals (psychiatrists and psychologists) per 1.000 inhabitants*. Due to the lack of data, the sub-dimension of *Mental Health* only considers the latter 3 indicators (*Yearly Consumption of Anti-Depressants*, the *Yearly Consumption of Anxiolytics* and the *Number of Active Professionals*).

4.5 The Problem of Dashboard Complexity: Difficult to Analyse and Harder to Build

Looking at most of the evaluated dashboards, we see these are complex, having several dimensions and underneath each dimension a group of indicators. Layard suggested "a single over-arching measure" to "guide policy" (Layard, 2009, p. 1) as this brings increased complexity and difficulty to the analysis, not to say to the effort alone on the gathering and standardizing of data collection, one of the issues the CMEPSP alerted to (J. E. Stiglitz et al., 2009).

However, reality is comprehensive and complex and therefore political and social sciences have felt the need for specializations while at the same time a need to add complementary visions in order to provide reasonable interpretations of events from the varied people's experiences. Environmentalist researchers around the world struggle with determining the relevant indicators and full consensus is yet to be reached

as the analysis needs to be systemic, and the different elements are co-dependent and intertwined.

We believe the same happens with well-being.

Far from being an easy and more simplistic indicator as GDP is, for which consensus in the way to measure has been reached and worldwide applied, well-being is less objective and more dependent on the context (structural and external conditions, such as safety, health, etc.), intrinsic personal beliefs (such as cultural aspects), and individual perceptions, feelings and emotions (such as the positive and negative affect, usually measured through questionnaires).

The indicators and dimensions differ among the different dashboards and so does the calculation methodology applicable to them. Recent scientific research in well-being and well-being related areas, such as mental health, supports us in adding additional indicators, hence complexity to the model.

Another criticism often appointed to these complex dashboards has to do with the availability of data and standardization of the collection methods, predominantly easier to retrieve from developed countries, and far more difficult to attain from less developed ones.

We argue that this was the case for the majority of the countries when the CMEPSP report was issued. In fact, it was the findings of the report which led for the countries national statistical institutions to redirect their efforts into capturing data related to the proposed indicators.

Some would also argue that data collection for the indicators is not harmonized across the globe, making it impossible to enlarge the comparative studies to most of the African or Asian countries, mostly underrepresented in this analysis.

We argue that this is an effort that can be done throughout time, as it was in fact for GDP. Furthermore, the World Happiness report accounted for 100 countries in its first edition (Sachs, Jeffrey D.; Helliwell, John F.; Layard, 2012, pp. 42–43), and the 2025 edition considers already 147 countries (Helliwell et al., 2025, pp. 17–19).

Additionally, we claim this effort to be an important one, as having as many countries represented in the dashboard would be important not only to better comprehend the phenomena, and potentially identify universal relevant indicators or dimensions, but also to provide a more globalized view that could otherwise be impaired. Having increasing representation of the Global South in the dashboards will help in that, by toning down what could potentially be a portrait of a considerable westernized and Global North view to the dimensions and indicators.

This is particularly important for poorer or less developed countries as we argue with Sachs' view that understanding the sources for well-being is more important in rich countries than in poor ones (Sachs, Jeffrey D.; Helliwell, John F.; Layard, 2012, p. 6). We challenge those indicators such as freedom or having a political voice, alongside with other indicators, may be at least as important as income in some countries' contexts.

4.6 National Well Being Dashboard Proposal

Hence, we will be considering the following dimensions in our proposed dashboard:

Table 24 – Considered Dimensions in the Proposed Dashboard Summary Table

Dimension	**Number of Indicators per Dimension**
Income and Wealth	4
Work and Job Quality	27
Working Environment and Conditions	8
Housing	6
Work-Life Balance	10
Health	11
Mental Health	4
Knowledge and Skills	15
Social Connections	16
Civic engagement	5

(Cont.)

Dimension	Number of Indicators per Dimension
Environment	7
Safety	9
Subjective Well-Being	21

The details of the dimension concepts and authors are available in Appendix 2. The full proposed dashboard database composition is described in detail in Appendix 4.

The dashboard follows the OECD How's Life structure, as it is the most comprehensive one following the CMESPS recommendations, designed to be applicable to any country and not specifically designed to attend a particular country needs or objectives. On top of the already defined indicators in the OECD dashboard, we've added the dimensions and indicators the literature points as potentially missing to explain well-being. The added dimensions and indicators are listed in detail in Appendix 4.

However, and given the constraints with data availability, we had to downsize the dashboard in terms of indicators but also in terms of the country sample. The excluded indicators are detailed in Appendix 4. The excluded countries are also listed in the Appendix 4.

Despite the data availability limitations, we were able to keep the majority of both the original indicators as well as the suggested added indicators, which will allow us to test our research question. We will however have to use some parsimony in terms of the analysis of the findings of our tests, to account for the data limitations, as in some dimensions, such as *Knowledge and Skills*, for which Adult data is missing, we don't have the data which allow us the full visibility of the country status.

4.7 The Backdrop for an Alternative Development Model to Thrive

As the GDP concept became world-wide applicable, so did the normative framework supporting it, influencing not only the economic relationships across the different agents, but also people's everyday lives. Alternative GDP measurement abound and so do alternative macroeconomic narratives. Nevertheless, a mismatch persists in terms of the normative framework of neo-liberalism and the many alternative GDP measurements.

The neo-capitalist view in regard to the limits of the usage of natural resources, and the individualistic approach promoted by the neo-liberalist narrative, do not constitute the most adequate framework for a well-being-based development model or any other proposed alternative model. We believe the principles embedded in the de-growth macroeconomic narrative, of respect for the planetary boundaries, the use of circular economies and collaborative approaches, ranging from the communities into the economic practices, which constitute the normative baseline common to the different proposals, are the ones more suitable for anchoring (in particular) a well-being-based development model.

Nonetheless, and without a widely adopted normative consensus, it'll be, however, very challenging to implement alternative GDP measurements and alternative public and social policies, in line with what an alternative development model would require and entail.

For an alternative measurement to thrive and gain world-wide acceptance, a new normative theoretical framework is required, also widely consensual and accepted, without which the void for political endorsement will endure.

Chapter 5 – Data Analysis Discussion

5.1 Well-Being Dashboard - 1st Level Streamlining

Through the dimension reduction the PCA analysis enables us to do, we've been able to extract 17 indicators as the ones most statistically relevant ones influencing well-being. The extracted indicators are:

- Long-Term Unemployment Rate – Men
- Long-Term Unemployment Rate
- Colleagues Trust
- Poor Households without access to Sanitary Facilities
- Inequalities Satisfaction with Time Use – Women
- Inequality Perceived Health – Men
- Inequality Perceived Health – Women
- Antidepressants Consumption
- Science Skills
- Social Support
- Personal Relationships
- Trust Legal System
- Inequality Feeling Safe Night – Secondary
- Life Satisfaction Mean
- Inequalities Life Satisfaction Men
- Inequalities Negative Affect – Women
- Inequalities Negative Affect - Primary

Considering the 17 extracted indicators we can provide a simplified well-being dashboard, with no significant data loss. These results are aligned with the literature review results.

We will add to these 17 indicators the constructs *Income and Wealth* as well as *Environment* which were not able to be constituted as dimensions but should be considered nonetheless for the streamlined well-being dashboard.

The 1st level streamlined well-being dashboard is depicted in the table below:

Table 25 – Proposed 1st Level Simplified Well-Being Dashboard

Dimension	Income & Wealth*	Work and Job Quality	Working Environment and Conditions	Housing	Work Life Balance	Health	Mental Health	Knowledge and Skills	Social Connections	Civic Engagement	Environment*	Safety	Subjective Well-Being
Variables	Household Income	LongTerm Unemployment Rate - Men	ColleaguesTrust	Poor Households without access to Sanitary Facilities	Inequalities Satisfaction with Time Use - Women	Inequality Perceived Health - Men	Antidepressants Consumption	Knowledge and Skills - Science	Social Support	Trust Legal System	CO2 Emmissions - Variance to threshold	Inequality Feeling Safe Night - Secondary	Life Satisfaction Mean
	Relative Income Poverty	LongTerm Unemployment Rate				Inequality Perceived Health - Women			Personal Relationships		Phosphorus - Variance to threshold		Inequalities Life Satisfaction Men
	Difficulty Making Ends Meet										Nitrogen - Variance to threshold		Inequalities Negative Affect - Women
	Vertical inequality Income and Wealth: S80/S20 income share ratio										Blue Water - Variance to threshold		Inequalities Negative Affect - Primary
											eHANPP - Variance to threshold		
											Ecological Footprint - Variance to threshold		
											Material Footprint - Variance to threshold		

* - Constructs for which dimensions were not able to be constituted and consequently no PCA analysis was able be performed, but are still to be considered in the dashboard

5.2 A 2nd Level Streamlining: The Well-Being Balanced Scorecard (WBBS)

Applying a correlations analysis enables us to understand which are the indicators which statistically influence well-being the most, be it positively or negatively. The findings can be summarised as follows:

Positive Influence:

- Personal Relationships – Social Connections
- Social Support – Social Connections
- Science – Knowledge and Skills
- Vertical Inequality: S80/S20 income share ratio - Income and Wealth
- Blue Water - Environment

Negative Influence:

- Inequalities Satisfaction with Time Use - Women – Work Life Balance
- Long-Term Unemployment Rate – Men – Work & Job Quality
- Inequality Feeling Safe Night – Secondary - Safety
- Nitrogen (Variance to Threshold) – Environment
- CO_2 Emissions (Variance to Threshold) – Environment

The results for both the positive and negative most statistically influential variables on well-being are aligned with other studies regarding Social Connections (FUCHSMAN, 2023; Vaillant, 2012), Work Life Balance (McKee-Ryan et al., 2005; van der Meer, 2014) or the Environment (Darçin, 2017; Orru et al., 2016).

The Correlations Analysis allows us also to validate the Planetary Boundaries model indicators applicability into the dashboard, in agreement with the literature review results. Although we determined that the *Environment* construct did not present a good reliability for a dimension to be constructed, the fact is that the indicator *Blue Water* is the 5th one which influences positively well-being the most, while *Nitrogen* and *CO_2 Emissions* are the 4th and 5th ones negatively influencing well-being the most.

These findings allow us to further streamline the proposed dashboard, allowing us to simplify once again the dashboard, enabling us to have a view on the key indicators which improve well-being and the key indicators which work as well-being detractors.

The proposed Well-Being Balanced Scorecard (WBBS) dashboard would then look like the one depicted in table 26 below, in which the green indicators positively influence well-being while the red indicators negatively influence well-being:

Table 26 – The Proposed Well-Being Balanced Scorecard (WBBS): Key Influential Indicators in Life Satisfaction

	Positive Influence				Negative Influence			
Dimension	Social Connections	Knowledge and Skills	Income and Wealth	Environment	Work Life Balance	Work and Job Quality	Safety	Environment
Variables	Social Support	Knowledge and Skills - Science	Vertical inequality Income and Wealth: S80/S20 income share ratio	Blue Water	Inequalities Satisfaction with Time Use - Women	LongTerm Unemployment Rate - Men	Inequality Feeling Safe Night - Secondary	Nitrogen - Variance to Threshold
	Personal Relationships							CO_2 Emissions - Variance to Threshold

5.3 Streamlined Dashboard Operationalisation

We will use the simplified dashboards we have identified, both the 1st level as well as the Well-Being Balanced Scorecard (WBBS), and operationalize them with the DB values. This will allow us to do some country comparisons and draw potential insights from the exercise.

Considering the streamlined dashboards we have identified, we've operationalized them based on the available data in our database.

The results are as follows for the 1st level streamlining dashboard:

Table 27 – 1st Level Streamlined Dashboard Operationalization

Dimension	Income & Wealth				Work and Job Quality		Working Environment and Conditions	Work Life Balance	Housing	Health		Mental Health	Knowledge and Skills	Civic Engagement	Environment							Safety	Social Connections		Subjective Well-Being			
Variables /Countries	Household Income	Relative Income Poverty	Difficulty Making Ends Meet	Vertical Inequality Income and Wealth: S80/S20 income share ratio	LongTerm Unemployment Rate - Men	LongTerm Unemployment Rate	ColleaguesTrust	Inequalities Satisfaction with Time Use - Women	Poor Households without access to Sanitary Facilities	**Inequality** Perceived Health - Men	**Inequality** Perceived Health - Women	Antidepressants Consumption	Knowledge and Skills - Science	Trust Legal System	CO2 Emissions - Variance to threshold	Phosphorus - Variance to threshold	Nitrogen - Variance to threshold	Blue Water - Variance to threshold	eHANPP - Variance to threshold	Ecological Footprint - Variance to threshold	Material Footprint - Variance to threshold	Inequality Feeling Safe Night - Secondary	Social Support	Personal Relationships	Life Satisfaction Mean	Inequalities Life Satisfaction Men	Inequalities Negative Affect - Women	Inequalities Negative Affect - Primary
Belgium	31598	8.2	19.1	3.8	-0.10835	0.93486	0.94861	0.04613	-0.65359	0.79591	0.63094	0.28333	0.05174	0.1674	-9.1	-2.9	-38.3	205	-0.4	-4.1	-18.4	-0.76414	0.23005	-0.46373	0.23606	0.61708	-0.30746	0.46285
Denmark	23619	6.4	9.3	3.5	-1.36819	0.94129	-0.39959	-0.11707	-0.31987	-1.05238	1.20797	-0.65558	0.06254	1.72162	-9.4	-2.7	-54.2	360	0.2	-2.8	-15.1	-0.43817	-0.16582	0.39482	0.16271	0.25191	0.25981	-0.56681
Estonia	30423	16.3	13.9	3.8	-0.4191	-1.04831	0.91162	1.16693	-0.47727	1.19364	-1.29974	-0.92794	0.21452	0.21353	-10.2	-3.4	-64.4	322	-0.5	-2.6	-19.9	1.11388	1.2508	0.12047	0.56445	0.17022	-1.13393	-0.53532
Finland	20968	6.5	6.1	5.2	0.00559	-1.33428	-1.33724	-0.09934	0.46423	-0.95196	-1.47833	-0.04703	1.64615	1.48093	-12.6	-3.5	-62.5	128	-1.9	-3.8	-10.2	-0.34398	-0.05916	-0.75289	-0.8482	0.03162	0.01023	-1.01968
France	30227	8.5	18.3	3.9	-0.43552	0.08764	0.00059	1.71672	-0.47847	0.51793	-0.5207	-0.25478	1.02028	-0.41344	-13.1	-5.6	-87.4	363	-1.8	-3.1	-23.7	1.00651	1.08721	0.80063	1.4971	0.70492	-1.80613	0.36327
Germany	31403	9.8	5.9	4.6	0.31874	1.63777	-0.08457	-0.10599	-0.65123	0.20671	0.04482	-0.72464	-0.21708	0.36733	-7.1	-6.3	-78.5	235	-0.3	-2.5	-15.6	-0.30775	0.34105	-0.43375	-0.65745	0.98021	-0.30252	0.3848
Hungary	18423	8.7	34.7	5	2.70375	0.31084	1.54943	-2.61347	-0.07418	0.29992	1.54661	-0.5475	-2.37985	-0.06766	-11.7	-3.5	-42.7	-310	-0.3	-2.2	-28.4	-1.48258	-2.51631	-2.76903	-2.30078	0.14532	1.65748	0.68597
Lithuania	18195	15.5	23.4	6.6	0.19486	-1.5596	-1.21453	0.21421	2.61309	-1.45166	-1.49958	-0.4349	-0.47254	-0.78053	-5.1	-5.6	-80.9	371	-1.9	-3.9	-9.1	-1.57744	-1.17839	-0.95888	-1.12331	-0.53164	0.50166	0.35401
Poland	34562	9.8	18.6	4	-0.88781	-0.37349	1.38814	0.95921	-0.71637	1.52008	-0.65954	-0.90525	0.10183	-0.94297	-15.6	-6.6	-99.1	267	-2.9	-3.1	-31.8	1.70512	1.06161	1.01832	1.0509	0.53397	-0.87894	-0.85568
Portugal	21492	10.4	29.2	4.3	-0.47373	0.81998	-0.54285	-0.11707	1.43152	-1.04014	0.20753	2.91414	1.13693	-1.04431	-7.7	-4.4	-65.4	412	0	-2.1	-12.5	-0.50075	-0.76013	-0.00605	1.37515	-0.83829	0.33416	-0.92654
Slovak Republic	22405	7.7	25.4	5.1	0.1401	0.89342	0.1721	-1.28658	-0.54082	-1.18544	-0.24625	-0.34795	0.10257	-0.99706	-6.1	-4	-39.4	-401	-0.3	-1.6	-18.5	0.02053	-0.85371	0.33703	-0.27366	-1.95387	1.64037	-0.53523
Slovenia	21859	7.5	20.5	3.5	0.40884	0.05274	-1.84952	-0.1769	1.19033	-0.53217	0.99358	-0.41855	-1.60409	-1.16531	-10.5	-3.8	-71.7	372	0.2	-2.1	-26.4	-0.78078	-0.06049	0.18875	-0.16082	-1.02029	0.96204	-0.93279
Spain	22658	14.2	27.1	3.6	-0.63434	0.6022	0.05473	0.26269	-0.51842	-0.17689	0.1078	1.27548	0.56107	-0.8628	-9	-2.9	-36.4	315	-1.6	-2.8	-18.5	1.32021	0.52909	1.17109	0.66227	-1.55215	0.47083	0.9216
Sweden	24955	8.9	8	5.9	1.40569	-0.63927	0.7855	-0.1215	-0.94651	0.38773	1.30434	0.39582	-0.24625	0.96871	-7.5	-5.2	-50.3	-200	-0.2	-1.7	-18.5	0.63707	0.63907	0.3953	-0.31464	0.74038	-0.21051	2.71945
Switzerland	31863	10.5	12.1	4.1	-0.85053	-1.32578	-0.38243	0.27201	-0.32244	1.46871	-0.33945	0.39535	0.02219	1.35459	-8.6	-4.8	-86.2	366	-2.1	-4.8	-17.6	0.39226	0.45513	0.95792	0.13023	1.72061	-1.19709	-0.51989

From the Dashboard in table 27 above we can see that the countries Hungary and Lithuania are the ones depicting the biggest number of indicators, 7 and 9 respectively, both highest or lowest in the sample. On the lowest part of this ranking, with only 2 indicators, are Portugal and Sweden. Consistently with the ranking in section 6.5 of this document, Portugal depicts the highest value in the DB for the principal component in the *Mental Health* dimension – *Antidepressant Consumption*.

It is relevant to take note of Finland behaviour regarding the dimensions *Social Connections* and *Subjective Well-Being*. Being considered consistently throughout the years as the "happiest country in the world" (Helliwell et al., 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025) we see that the indicators *Social Support*, *Personal Relationships* and *Life Satisfaction* all demonstrate negative values. Furthermore, the related inequality indicators Life Satisfaction – Men and Negative Affect – Women both demonstrate positive values, portraying a bad positioning in terms of these 2 inequalities. The only exception in this trend is observed with the indicator *Inequalities Negative Affect – Primary*, which shows a negative value.

Identical observation can be withdrawn from the values regarding Hungary. Hungary has the 3 lowest values in the sample for the indicators *Social Support*, *Personal Relationships* - hence the lowest in the sample in terms of the dimension *Social Connections* -, and *Life Satisfaction*. Additionally to *Life Satisfaction*, all the remaining indicators from the *Subjective Well-Being* Dimension, the Inequalities indicators, all show positive results, demonstrating increased inequalities in these subjective measures, consistent with the other results.

Another interesting example is the case of Switzerland as the country displays the worst result in the sample regarding the indicator *Inequality of Perceived Health – Men*, while the *Inequality of Perceived Health – Women* demonstrates a positive trend, reinforcing the importance of having inequality gender analysis. Switzerland also shows one of the highest values in regard to the dimension *Civic Engagement* and the indicator *Trust in the Legal System*, but the worst values in the sample in terms of the *Environment*

dimension for the indicators *eHANPP* and *Ecological Footprint*. It is also worth to note that for the dimensions *Social Connections* and *Subjective Well-Being* all the indicators are positive except for the indicator *Inequalities Life Satisfaction – Men* which, by displaying the biggest value in the sample shows a high inequality.

Given these first outcomes of the dashboard operationalization, we decided to zoom in on the results on the highest ranked countries in the World Happiness Report for the same period, 2018. According to the report, the countries Finland, Denmark and Switzerland rank numbers 1, 2 and 6 respectively (Helliwell et al., 2019). As we didn't have correspondence in our DB sample, we could not extend the analysis of the countries ranked between 3-5 in the same report. The results are summarized in the table below:

Table 28 – 1st Level Streamlined Dashboard Operationalization: Highest Ranked Countries in WHR 2019

Dimension	Income & Wealth				Work and Job Quality		Working Environment and Conditions	Work Life Balance	Housing	Health		Mental Health	Knowledge and Skills	Civic Engagement	Environment							Safety	Social Connections		Subjective Well-Being			
Variables /Countries	Household Income	Relative Income Poverty	Difficulty Making Ends Meet	Vertical inequality Income and Wealth: S80/S20 income share ratio	LongTerm Unemployment Rate - Men	LongTerm Unemployment Rate	ColleaguesTrust	Inequalities Satisfaction with Time Use - Women	Poor Households without access to Sanitary Facilities	Inequality Perceived Health - Men	Inequality Perceived Health - Women	Antidepressants Consumption	Knowledge and Skills - Science	Trust Legal System	CO2 Emissions - Variance to threshold	Phosphorus - Variance to threshold	Nitrogen - Variance to threshold	Blue Water - Variance to threshold	eHANPP - Variance to threshold	Ecological Footprint - Variance to threshold	Material Footprint - Variance to threshold	Inequality Feeling Safe Night - Secondary	Social Support	Personal Relationships	Life Satisfaction Mean	Inequalities Life Satisfaction Men	Inequalities Negative Affect - Women	Inequalities Negative Affect - Primary
Finland	20968	6.5	6.1	5.2	0.00559	0.11196	-1.33724	-0.09934	0.46423	-0.95196	-1.47833	-0.04703	1.64615	1.48093	-12.6	-3.5	-62.5	128	-1.9	-3.8	-10.2	-0.34398	-0.05916	-0.75289	-0.8482	0.03162	0.01023	-1.01968
Denmark	23619	6.4	9.3	3.5	-1.36819	0.94129	-0.39959	-0.11707	-0.31987	-1.05238	1.20797	-0.65558	0.06254	1.72162	-9.4	-2.7	-54.2	360	0.2	-2.8	-15.1	-0.43817	-0.16582	0.39482	0.16271	0.25191	0.25981	-0.56681
Switzerland	31863	10.5	12.1	4.1	-0.85053	-0.95011	-0.38243	0.27201	-0.32244	1.46871	-0.33945	0.39535	0.02219	1.35459	-8.6	-4.8	-86.2	366	-2.1	-4.8	-17.6	0.39226	0.45513	0.95792	0.13023	1.72061	-1.19709	-0.51989

From the table 28 we can see that the indicators related to *Income and Wealth* follow the same trend for the 3 countries and it is important to note that Denmark displays the lowest values in the sample for the indicators *Relative Income Poverty* and *Vertical Inequality Income and Wealth*. The indicator *Colleagues Trust* from the dimension *Working Environment and Conditions* shows negative values for the 3 countries, whilst the *Work Life Balance* indicator Inequalities regarding Satisfaction with Time Use – Women shows a positive outlook for Finland and Denmark although a negative one for Switzerland, most probably due to some constraints still faced with the post-motherhood period, regarding the combination of reintegration in the workforce and access to kindergartens factors. Both dimensions of *Knowledge and Skills* and *Civic Engagement* follow the same trend in the 3 countries with Finland depicting the highest value in the sample for the indicator *Knowledge and Skills – Science* and Denmark presenting the highest value in the sample for the indicator *Trust in the Legal System*. For all the indicators under the *Environment* dimension, the 3 countries show a consistent behaviour, with exception of Denmark in the indicator eHANPP displaying the best performance in the sample within this threshold. When analysing the indicators behaviour among the 3 countries for the dimensions *Social Connections* and *Subjective Well-Being* we can't see any consistent trend, exception made for the indicator *Inequalities Life Satisfaction – Men* and *Inequalities Negative Affect – Primary*. The former displays high Inequalities for the 3 countries and of which Switzerland presents the highest value of the DB sample. The latter shows an opposite trend, with the 3 countries showing all low values and of which Finland depicts the lowest value for the whole sample.

Applying the Well-Being Balanced Scorecard (WBBS) to do the analysis on the highest ranked countries in the 2019 WHR the results are as follows:

Table 29 – Well-Being Balanced Scorecard (WBBS) Operationalization: Highest Ranked Countries in WHR 2019

	Positive Influence					Negative Influence				
Dimension	Social Connections		Knowledge and Skills	Income & Wealth	Environment	Work Life Balance	Work and Job Quality	Safety	Environment	
Variables /Countries	Social Support	Personal Relationships	Knowledge and Skills - Science	Vertical inequality Income and Wealth: S80/S20 income share ratio	Blue Water - Variance to threshold	Inequalities Satisfaction with Time Use - Women	LongTerm Unemployment Rate - Men	Inequality Feeling Safe Night - Secondary	Nitrogen - Variance to threshold	CO2 Emissions - Variance to threshold
Finland	-0.05916	-0.75289	1.64615	5.2	128	-0.09934	0.00559	-0.34398	-62.5	-12.6
Denmark	-0.16582	0.39482	0.06254	3.5	360	-0.11707	-1.36819	-0.43817	-54.2	-9.4
Switzerland	0.45513	0.95792	0.02219	4.1	366	0.27201	-0.85053	0.39226	-86.2	-8.6

The approach we have adopted is fully aligned with the European Commission's Sustainable and Inclusive Well-Being (SIWB) initiative as it considers a layered approach with a 120 indicator dashboard upon which a simplified version is used whilst the adopted environmental model is the Planetary Boundaries, the same we adopted in our model (Benczur et al., 2024).

The results of the *Knowledge and Skills* positive impact trend for the 3 countries is consistent with the PISA 2018 science results as well as with the 2022 results. In both reports, the 3 countries are grouped in top ranking group positions, depicting a high performance in this area (OECD, 2019, 2023c; Schleicher, 2019, 2023).

Additionally, the results regarding income inequality are also consistent with the results from the World Inequality Ranking which ranks Finland in the 156th position Denmark in the 154th position and Switzerland in the 162nd position of the total 169 countries evaluated, giving these 3 countries the lowest positions in terms of income inequality with a total difference of 1,25 in the bottom 50% and 1,45 in the top 1% (Ventura, 2022).

There is a positive trend in the 3 countries regarding the dimensions *Knowledge and Skills*, *Income and Wealth* and *Environment* (*Blue Water*) that possibly outweigh the negative values on the *Social Connections* dimension. Additionally, the dimensions *Work Life Balance* and *Safety* show a positive trend for both Finland and Denmark, diminishing the negative impact it could bring in terms of overall well-being. The dimension *Work*

and Job Quality shows better results for Denmark and Switzerland and the negative impact of the indicators *Nitrogen* and *CO_2 Emissions* is consistent among the 3 countries as all of them overshoot the threshold.

5.4 Operationalisation Outcomes Discussion – An Index and Raking Analysis

As we were able to write the well-being equation, both for all the indicators in the Well-Being Balanced Scorecard (WBBS) as for the positive impact indicators only, we have operationalized the dashboard indicators for every country in the DB[26]. We ranked the results and the same are depicted as follows:

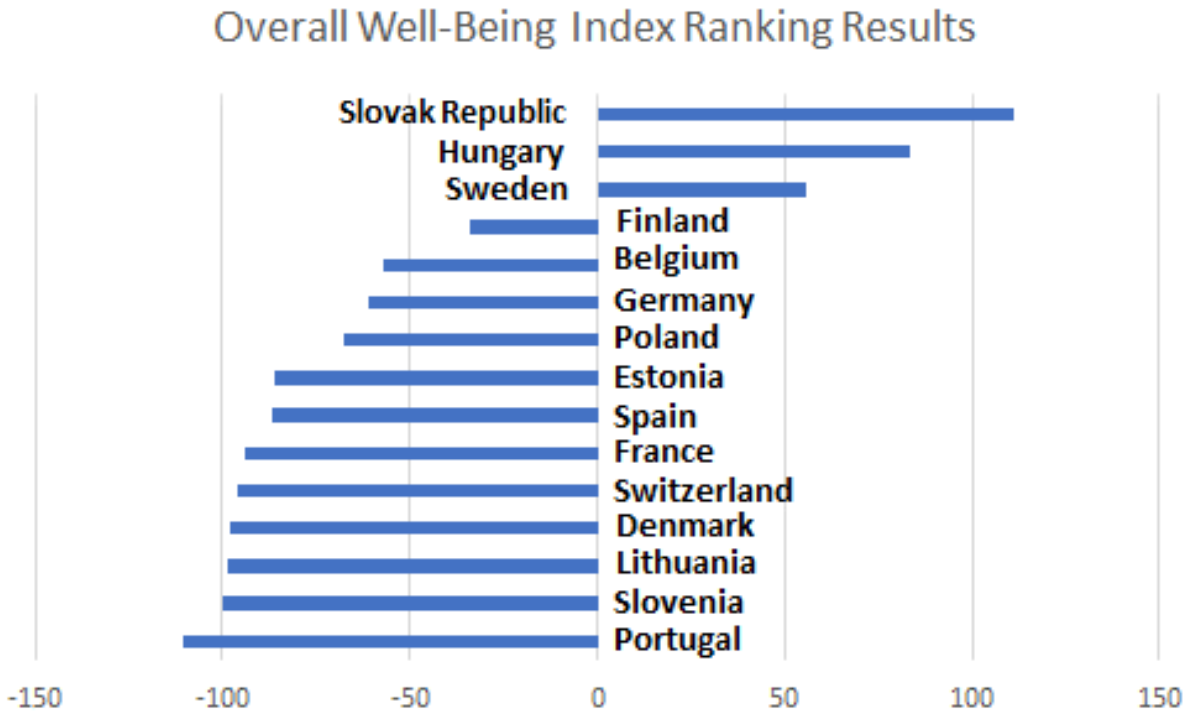

Figure 35 –Well-Being Index Ranking Results, all the indicators from the Well-Being Balanced Scorecard (WBBS)

(Author's own creation)

[26] The table with the multiple linear regression results operationalization for all countries is available in Appendix 9

It is somewhat surprising to verify that countries such as Slovak Republic and Hungary are leading the ranking, before countries such as Finland (consistently ranking 1st place in the WHR Ranking of Happiness for the period 2018 - 2025), Sweden (ranking 7th on the WHR 2019[27] Happiness Ranking) or Switzerland (ranking 6th on the WHR 2019 Happiness Ranking) (Helliwell et al., 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025). Additionally, and also surprisingly, Switzerland position in the ranking is lower than Poland or Estonia.

However, these results show consistency in terms of Inequality for both Slovakia and Hungary. According to the World Inequality Database data, Slovakia ranks 166th place in a total of 169 (the latter being the least unequal country in the ranking) and Hungary occupies the 157th place (Chancel et al., 2022; Ventura, 2022). On the other hand, World Economics also displays Slovak Republic as the least unequal country, ranking number 1, while Hungary ranks the 14th place as the least unequal country in a total of 156 (World Economics, n.d.).

Additionally, OECD's Better Life Index[28] shows Slovak Republic and Hungary "outperforms the average in (…) social connections" (*Hungary*, n.d.; *Slovak Republic*, n.d.), but these results are only confirmed for Slovak Republic in the 2018 Eurostat Statistics on Income and Living Conditions Survey (EU-SILC) / Satisfaction with Personal Relationships (*Are You Satisfied with Your Personal Relationships?*, 2020; *Glossary:EU Statistics on Income and Living Conditions (EU-SILC)*, n.d.), which is still placed above European Union (EU) average.

Nevertheless, caution is advised when looking at the results of the analysis as the indicators are aggregated and there are only 15 observations in the database, for which the weight of the outliers can be relevant.

[27] The "Ranking of Happiness" available in the World Happiness Report 2019 considers the period 2016-2018, hence including the same year / period of the available data in our sample DB (Helliwell et al., 2019).

[28] OECD's Better Life Index is a tool which allows the user to create their own well-being index and share them, namely with OECD. This index considers 11 dimensions, is updated yearly and results from the inputs users provide in the platform. For additional information please refer to https://www.oecdbetterlifeindex.org/about/better-life-initiative/ and https://www.oecdbetterlifeindex.org/media/bli/documents/BLI_executive_summary_2014.pdf

Therefore, the results above are only illustrative and additional research should be pursued with bigger data samples.

We zoomed in on the ranking results and operationalized the ranking for the positive impact indicators only. The results are presented next:

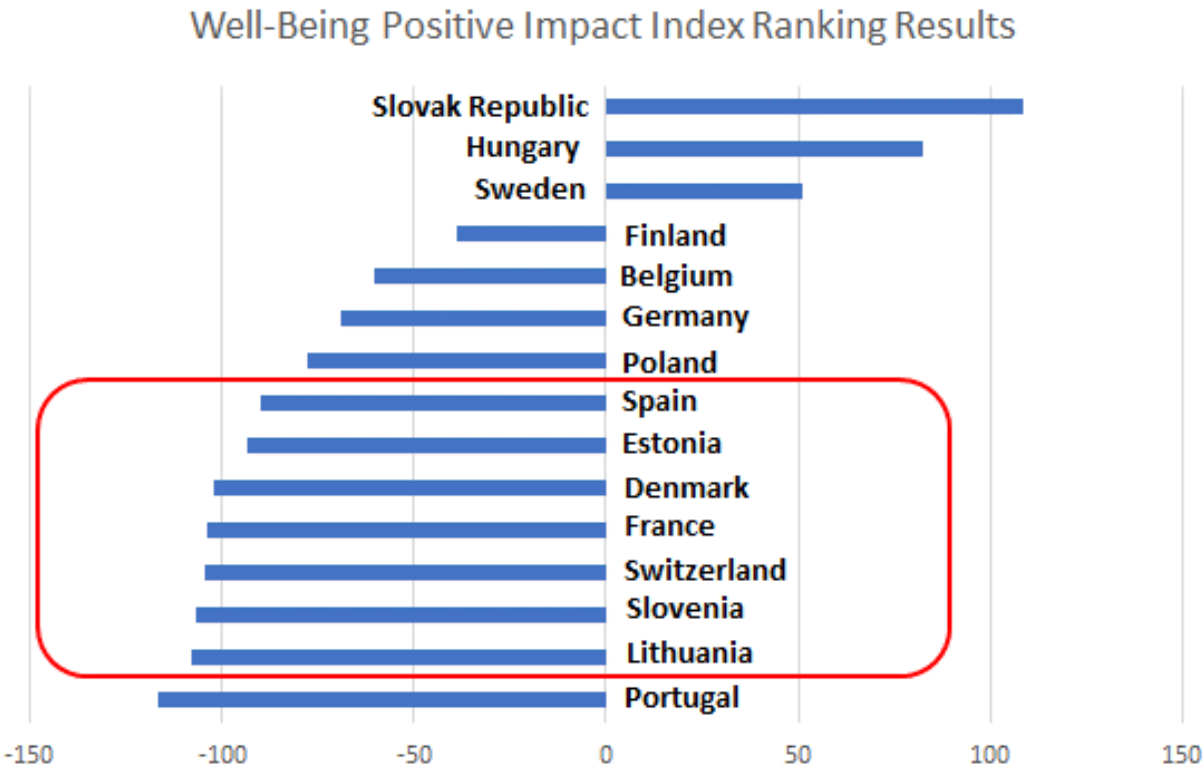

Figure 36 –Well-Being Index Positive Impact Indicators Ranking Results, indicators from the Well-Being Balanced Scorecard (WBBS)

The results are consistent with the ones obtained with all the indicators from the 2nd level dashboard for the top of the ranking and lowest in the ranking. The countries in the lower bottom display different positions from the previous ranking, which seems to underline the importance of having a detailed analysis per indicator provided by the dashboard, whilst considering the weights each of the indicators take, as it can be determinant for the application and prioritization of public and social policies to influence citizens' well-being increments.

5.5 Results Operationalization with UN's World Happiness Report Data Discussion

We tested our model using UN's WHR Life Satisfaction indicator as the dependent indicator and the results of the multiple regression analysis depicted negatives adjusted $R_{2,}$ both in the test for the positive and negative well-being influencing indicators, as well as for the positive well-being influencing indicators only. This means that the analysis is statistically irrelevant and cannot be considered, probably due to the fact that there are only 15 observations in the database, for which the weight of the outliers can be relevant.

Nevertheless, we were able to observe that for the positive influencing well-being indicators, the results of a potential ranking are more consistent with the results of the WHR 2019 Happiness Ranking results (Helliwell et al., 2019), as for the eligible countries in our sample such as Denmark, Switzerland, and Finland also rank the top 3 countries[29]. Nevertheless, the results seem to underline the importance of having a detailed analysis per indicator provided by the dashboard, whilst considering the weights each of the indicators take, as it can be determinant for the application and prioritization of public and social policies to influence citizens' well-being increments.

[29] As Iceland and Norway are not considered in our DB.

Recommendations for Further Research

The challenge of having comprehensive data sets in terms of indicator data but also country data in all the indicators has improved throughout the years after efforts several countries have done. We recommend this effort to continue as data is still missing from the identified indicators and for the others we have suggested to include in the dashboard, as suggested by the theoretical framework.

Once available, data should be kept as open source whenever possible to allow for multiple research projects to thrive. We will continue to pursue this research in other instances as soon as bigger data samples become available.

Regarding the dimension Working Environment and Conditions it is recommended that the dimension is tested with a larger data sample to verify if there is any change in terms of the most relevant indicators explaining the dimension, hence consistency is confirmed, or if other indicators arise as more important. Additionally, inequalities in the Working Environment and Conditions data should be expanded from the one used in the present research. Available data only allowed us to use inequalities in the Work Environment and Conditions related to gender, but theory suggests other inequalities related to ethnicity, religion, physical disabilities and neurodiversity should also be accounted for, especially when the topic of diversity and inclusion gains increasingly more relevance.

It is also recommended testing the statistical relevancy of the indicator Energetic Poverty under the Housing dimension with a larger dataset, allowing us to either consider or permanently exclude this indicator from the dashboard, as it may not be statistically significant.

The Mental Health sub-dimension we added in the dashboard demonstrated to be statistically relevant in terms of Well-Being. Nevertheless, we recommend that further research takes place to evaluate if our conclusions keep the consistency once the indicators Hours of Sleep, and Number of Psychiatric and Psychological Consultations are introduced in a given data sample. Additionally, we recommend

further discussions should be entailed in order to understand if additional indicators need to be considered under this sub-dimension or if there are more relevant indicators that should instead take place. Consequent statistical tests to evaluate and compare the relevancy are therefore also recommended.

The relationship between genetics and well-being has been gaining increased traction within the academia and the 2022 World Happiness Report (Helliwell et al., 2022) devotes 1 chapter exclusively to this problematic, although no genomic wide association study (GWA) was conducted for the report to provide a country analysis.

We argue for the need to understand whether genetics is a relevant indicator or not.

Nevertheless, additional research will be required in different countries in order to assess the relevancy of the indicator, but also overtime, to evaluate and keep track on potential changes resulting out of the increasing migration movements across the world. We argue that these insights will allow us to better understand the overall well-being in the different countries and any changes throughout time.

We couldn't include any indicator concerning Genetics in the dashboard due to lack of available data. We strongly recommend further research in this domain to be pursued, as it is important to understand whether at a national level this dimension influences, and to which extent, national well-being. This will also allow to understand potential additional impacts from migration movements and bring additional light on the discussion of the importance of diversity and inclusion at a national level. We understand the many constraints there are regarding genetics data availability, from a financial, privacy and ethical standpoints, but we believe that understanding the full spectrum of well-being will not be complete until scientific efforts are successful in this endeavour. Having established the importance of genetics at an individual level, we should be able to affirm or discard its importance at a national level through GWA data samples.

We would also like to recommend that further analysis is to be conducted in terms of Civic Engagement dimension, especially in terms of the Corruption indicator,

whenever the data set includes a wider country sample and ideally the Global South, in order to confirm or reject the findings in our work, which statistically found this indicator neglectable.

Regarding the Subjective Well-Being dimension we'd recommend that data is gathered regarding the indicator Purpose (the individual perception of knowing or fulfilling their life purpose), and statistical tests are undertaken aiming to understand whether this indicator is statistically relevant to explain the dimension, and if it should be included in the dashboard moving forward, as again, the theoretical framework suggests this to be a relevant well-being factor.

In our analysis we were forced to exclude some indicators and countries due to lack of data. It is therefore recommended that the statistical tests are repeated with larger data sets in order to verify or challenge the findings this research has reached. This will also allow to verify the statistical relevance and contribution of the added indicators to explain well-being and re-evaluate the findings, in terms of key indicators for a nation's well-being.

Not only from an indicator and dimension standpoint, but also from a Cluster analysis perspective, a larger data set providing more country profiles, ideally including countries from the Global South, will probably bring additional insights in terms of which dimensions are particularly sensitive in differentiating the country clusters. In our analysis we've seen a big consistency of countries within Clusters across different indicators which, with an enlarged country sample could result in different and potentially more insightful conclusions.

Due to the lack of an enlarged dataset in terms of indicators as well as country profiles one important analysis came short in this research, which we strongly recommend being pursued in coming studies. When we move the analysis from a National level to a Global one, additional insights coming from country comparison can be drawn. That of course entails that the adoption of a standardized dashboard is in place, and that the collection of data methodologies is also standardized across the world. This will also enable to compare larger country clusters, providing a clearer

understanding of the well-being most striking differences between the Global North and Global South, eastern and western country clusters, and what are the dimensions that influence the differences the most.

This is an effort with implications on the national statistical systems, but also potentially on the national accounting, fiscal and tax systems and its policies, but we believe this effort is needed, as it can provide relevant support in terms of understanding, not only what are the key drivers to improve global well-being, but in particular the need to enforce global policies, aiming to abide to environmental thresholds, thus increased visibility on actionable measures safeguarding planet environment.

Additionally, in terms of data analysis, researchers should be particularly sensitive to technological breakthroughs, especially in regards to machine learning and artificial intelligence, as these technologies can be of great interest in the use of predictive models and big data applied to well-being (Oparina et al., 2022).

Conclusions

Throughout the concept discussion we saw how well-being appeared to be an overarching concept which included concepts such as Happiness, Life Satisfaction or Quality of Life. Reinforced with the data results, we can now conclude that Life Satisfaction is in fact a Well-Being component. It is thus recommended that future studies in this area adopt a common naming convention in order to clarify the concepts and the target of the research. A common definition for Well-Being is still missing but we believe the definition proposed in this research can provide a solid baseline for the concept and provide support in further discussions.

We argued that a country performance is better understood through a multiple KPI dashboard view instead of an index, following the CMESPS recommendations, for which we've proposed a dashboard, considering OECD's How's Life Report dashboard as a baseline to which we added missing dimensions and indicators. We believe the proposed set of dimensions and indicators this research focused on is a step forward for what such a dashboard should comprise, as it builds on existing research and additionally bridges with the latest well-being theoretical framework.

The index and ranking approach is still useful to understand how far countries depicting lower levels of well-being would have to improve the key drivers, to improve overall citizen's well-being, which is to say that this approach can be relevant as a micro analysis tool, and an important aid in a one glance country comparison analysis.

Overall, we can observe the importance of inequalities in explaining the dimensions as 29% of the extracted indicators are inequality related indicators. This finding is quite significant as it points to the relevance of not relying exclusively in indicators which result of averages or medians as they hide the asymmetries in a population. This finding can bring up important discussions moving forward in terms of public and social policies, taxation and legislation that could help to eradicate or minimize inequalities. Discussions such as gender balance quoting, the importance of

limiting the asymmetries in wage earnings as proposed by Raworth (Raworth, 2017b), measures to ensure equal opportunity in the access to fundamental services such as Health and Education or policies towards integration of migrants need to be prioritized if we want to consider a population well-being. The inequalities importance demonstrates that no dashboard should be considered without these indicators, ideally per dimension and covering the different types of inequalities. Hence, additional caution may be advised when drawing conclusions from rankings[30] in which inequalities are not considered in the indicator calculation.

In this research we were able to determine what are the key indicators in the dashboard should we consider simplifying the model.

Out of the 142 indicators, 28 are the most statistically relevant ones to influence well-being, which is to say that with minor loss of information, public and social policy can be driven by focusing on 19,7% of the full dashboard to improve a nation's well-being.

We were able to further streamline the dashboard simplification to a 2nd level, allowing us to propose the Well-Being Balanced Scorecard (WBBS), which considers the top 5 well-being most influential indicators, be it positively or negatively, suggesting that by concentrating on just 7% of the entire dashboard indicators, public and social policy can be effectively guided with minimal information loss to enhance a nation's well-being, providing an additional tool to aid in the political decision-making process in terms of budget and public and social policy prioritization.

As we've operationalized the dashboards and formulated a well-being equation based on the key indicators influencing well-being, we uncovered different results from the majority of well-being available composite indexes as depicted in the figure below:

[30] In fact, the authors of the World Happiness Report recognised the importance of inequalities during the launch of the 2023 report, although these are still absent from the ranking and their calculation methodology.

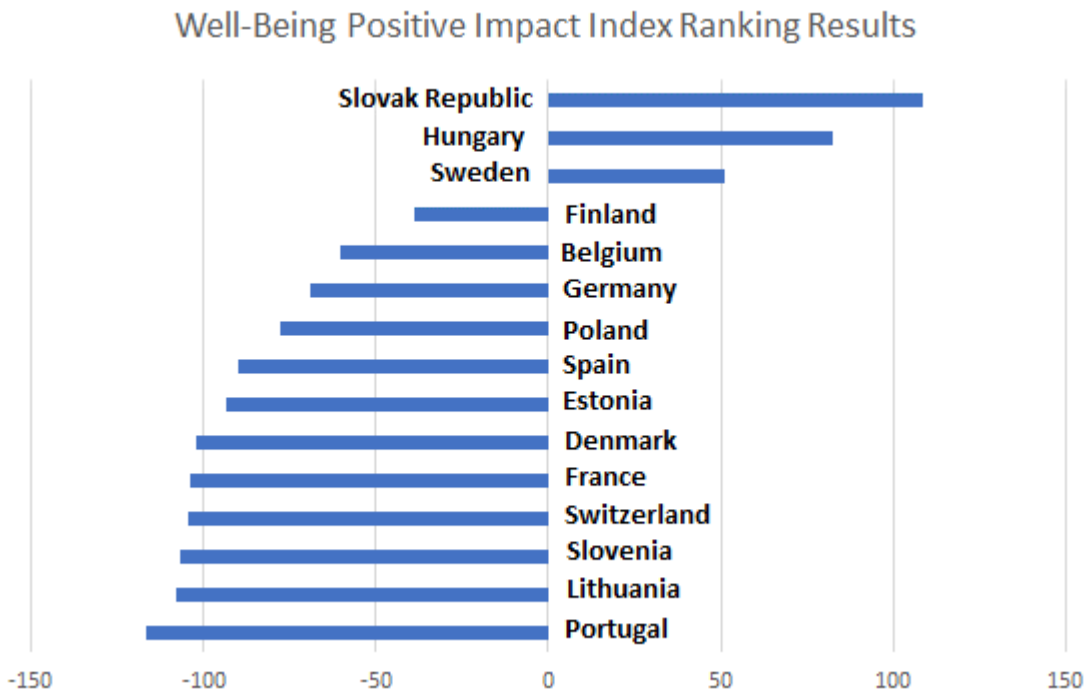

Figure 37 –Well-Being Index Positive Impact Indicators Ranking Results, indicators from the Well-Being Balanced Scorecard (WBBS)

(Author's own creation)

The combination of the key indicators driving positive influence into a nation's well-being, of which inequality in terms of income and the environment are considered, bring significantly different results from the approach followed by other indexes presented thus far, dethroning from the leadership of the ranking countries which traditionally occupy the top places. We believe these results will invite well-being researchers to question how national well-being has been considered up until now and how governments should approach it.

Regarding the Cluster analysis we've undertook we were able to observe very consistent clusters, since several countries are always present in the same cluster regardless of the indicators, and we were able to confirm that the Cluster results are also consistent for different timelines.

As the data sample is based upon OECD countries, with similar cultural traits and economic models, some degree of consistency is to be expected for which a broader variety of countries would most probably enrich the analysis and potentially allow for different outcomes.

Considering our findings, we believe this research can support moving forward government' choices in terms of well-being measurement and tooling, and the focal points to drive public and social policies in a way that increases citizen' well-being. We hope the findings can also provide a lighthouse for the road ahead, the path that still needs to be pursued in order to enlarge the comprehension of well-being at a national level, and especially in regard to country comparison through standardization, being in indicators and available data as well as data collection methodologies. We also believe this research can become an important baseline for further studies, hopefully with improved data, larger datasets and country profiles.

Given the findings in terms of the key indicators, this research creates room to challenge what is becoming a rooted conviction regarding the European Nordic countries as the ones where well-being is the highest. This research also highlights the importance of inequalities in terms of well-being at a national level, for which any further research on this area should include them in their analysis. The present research can also provide additional ground for further research in line with European Commission research financing directives, especially regarding the programs Horizon Europe and the LIFE programme 2021-2027, Climate Change Mitigation and Adaptation (European Commission, n.d.-a).

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Appendix

1. **Proposed Indicators Definition**

For the proposed indicators to be added into the dashboard, resulting of the Gap Analysis, the definitions of each of the indicators is as follows:

Table 30 – Proposed Added Indicators Definition

Indicator	**Source**	**Definition:**	**Reference**
Disability adjusted life years (DALY)	World Health Organization (WHO)	"One DALY represents the loss of the equivalent of one year of full health. DALYs for a disease or health condition are the sum of the years of life lost to due to premature mortality (YLLs) and the years lived with a disability (YLDs) due to prevalent cases of the disease or health condition in a population" (WHO - World Health Organization, n.d.).	WHO– World Health Organization, Global Health Observatory
Hours of sleep	Our World In Data - University of Oxford	Time spent daily sleeping. The data results of questionnaires "where respondents are asked to recall the amount of time spent on different activities on a specific day in the previous week" as well as OECD Data (Ortiz-Ospina, 2020)	Our World in Data
National consumption of anxiolytics and antidepressants (per year)	Statista	Consumption of anxiolytic and antidepressant drugs in defined daily dosage per 1.000 inhabitants (Mikulic, 2023; Stewart, 2022)	Statista

(Cont.)

Indicator	Source	Definition:	Reference
Burn-out and stress related hospital occurrences	Statista	"Burn-out is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: feelings of energy depletion or exhaustion; increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and reduced professional efficacy. Burn-out refers specifically to phenomena in the occupational context and should not be applied to describe experiences in other areas of life." (*Burn-out an "Occupational Phenomenon": International Classification of Diseases*, 2019; Stewart, 2023)	WHO
Psychiatric and Psychological consultations	Eurostat Data Browser	Number of consultations provided by Psychologists, psychotherapists or psychiatrists and the indicators are calculated in terms of percentages. https://ec.europa.eu/eurostat/cache/metadata/en/hlth_det_esms.htm#unit_measure1678715439901; https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_am6e/default/table?lang=en	Eurostat Data Browser
Number of (mental health) professionals	WHO - The Global Health Observatory, Indicators	"Psychiatrists working in mental health sector (per 100,000)" (*Psychiatrists Working in Mental Health Sector (per 100,000)*, 2019) inhabitants	WHO - The Global Health Observatory

(Cont.)

Indicator	Source	Definition:	Reference
Paid hours	Eurofund – European Foundation for the Improvement of Living and Working Conditions	Eurofund's European Working Conditions Survey data on the question under "Working Time" for all the countries – "How many hours per week do you usually work?" (Eurofund, 2023)	Eurofund Data Catalog / European Working Conditions
Working hours (includes care givers, housework, etc.)		Eurofund's European Working Conditions Survey data on the question under "Working Time" for all the countries – "Sum of total working hours for main job and other jobs" (Eurofund, 2023)	
Company engagement		Eurofund's European Working Conditions Survey data on the Engagement Index, visible under "Engagement and job fulfilment" for all the countries (Eurofund, 2023)	
Colleagues trust		Eurofund's European Working Conditions Survey data on the question under "Engagement and job fulfilment" for all the countries – "To what extent do you agree or disagree – There is good cooperation between you and your colleagues" (Eurofund, 2023)	
Hierarchy trust		Eurofund's European Working Conditions Survey data on the question under "Engagement and job fulfilment" for all the countries – "To what extent do you agree or disagree – In general, employees trust management" (Eurofund, 2023)	
Stress level	Eurostat Data Browser	Persons reporting a work-related health problem resulting in limitations of daily activities (Eurostat, 2023)	Population and social conditions / (…)/ Work-related health problems

(Cont.)

Indicator	Source	Definition:	Reference
Flexibility (time off, medical appointments, remote work; working hours, etc.)	Eurofund – European Foundation for the Improvement of Living and Working Conditions	Eurofund's European Working Conditions Survey data on the question under "Working time" for all the countries – "Is it difficult to take an hour or two off to take care of personal or family matters during working hours" (Eurofund, 2023)	Eurofund Data Catalog / European Working Conditions
Individual value (self perception of how much the institution values the individual)		Eurofund's European Working Conditions Survey data on the question under "Engagement and job fulfilment" for all the countries – "Does your job give you a feeling of work well done?" (Eurofund, 2023)	
Inequalities in the working environment (gender, ethnicity, salaries, promotions, etc.)	Statista	Gender pay gap in selected European countries in 2021. "The indicator measures the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees. The indicator has been defined as unadjusted, because it gives an overall picture of gender inequalities in terms of pay and measures a concept which is broader than the concept of equal pay for equal work. All employees working in firms with ten or more employees, without restrictions for age and hours worked, are included." (Statista Research Department, 2023)	Statista / Economy & Politics / Economy

(Cont.)

Indicator	Source	Definition:	Reference
Trust in the Legal System	ESS – European Social Survey	Data results of the questionnaire ESS round 9 – 2018: Timing of life, Justice and fairness to the question "Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly... ...the legal system?" (ESS - European Social Survey, 2020)	ESS – European Social Survey / ESS round 9 - 2018. Timing of life, Justice and fairness
Trust in the Police		Data results of the questionnaire ESS round 9 – 2018: Timing of life, Justice and fairness to the question "Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly... ...the police?" (ESS - European Social Survey, 2020)	
Trust in the Politicians		Data results of the questionnaire ESS round 9 – 2018: Timing of life, Justice and fairness to the question "Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly... ...politicians?" (ESS - European Social Survey, 2020)	

(Cont.)

Indicator	Source	Definition:	Reference
Trust in the Political Parties	ESS – European Social Survey	Data results of the questionnaire ESS round 9 – 2018: Timing of life, Justice and fairness to the question "Using this card, please tell me on a score of 0-10 how much you personally trust each of the institutions I read out. 0 means you do not trust an institution at all, and 10 means you have complete trust. Firstly... ...political parties?" (ESS - European Social Survey, 2020)	ESS – European Social Survey / ESS round 9 - 2018. Timing of life, Justice and fairness
Crime rate	Numbeo	The Crime index "is an estimation of the overall level of crime in a given city or country" and results of "surveys conducted by visitors" to Numbeo website, hence " based on user-contributed data and perceptions" (About Crime Indices At This Website, n.d.). The survey considers the responses on the following topics: • "General perception of crime levels • Perceived safety: Survey responses from residents and visitors regarding their feelings of safety while walking during daylight and at night. • Concerns about specific crimes: Survey questions about worries regarding mugging, robbery, car theft, physical attacks by strangers, harassment in public places, and discrimination based on factors like skin color, ethnicity, gender, or religion. • Property crimes: Assessment of the extent of property-related crimes, such as burglary, theft, vandalism, etc. • Violent crimes: Evaluation of the perception of violent crimes, including assault, homicide, sexual offenses, etc." (id.)	Numbeo / Europe: Crime Index by Country 2021/ More information about these indices

(Cont.)

Indicator	Source	Definition:	Reference
CO_2 Emissions Variance	University of Leeds – A Good Life for All Within Planetary Boundaries	This indicator measures the difference between the defined threshold at a country level and the actual level for CO_2 emissions per country. The threshold for CO_2 emissions is "is generally expressed as a maximum concentration (…) of 350 ppm". "To estimate national performance (…) CO_2 emissions data were obtained from (…) upstream emissions (…) and cement production" (Fanning et al., 2022, p. 1).	University of Leeds – A Good Life for All Within Planetary Boundaries / Download Data / Supplementary Information
Phosphorus Variance		This indicator measures the difference between the defined threshold at a country level and the actual level for phosphorus per country. "The planetary boundary for phosphorus is 6.2 Tg P y^{-1} mined and applied to erodible (agricultural) soils, (…), and current global phosphorus fertilizer use is more than 14 Tg P $y^{-1.12}$" (Fanning et al., 2022, p. 2).	
Nitrogen Variance		This indicator measures the difference between the defined threshold at a country level and the actual level for nitrogen per country. "The planetary boundary for nitrogen is 62 Tg N y^{-1}, (…) , and current global nitrogen fixation is approximately 150 Tg N $y^{-1.12}$ " (Fanning et al., 2022, p. 2).	
eHANPP Variance		The embodied human appropriation of net primary productivity (eHANPP) results of the sum up of "agricultural and forestry series" coming from national HANPP data which measures "consumption-based allocation of HANPP to final biomass products from agriculture and forestry" . "Global eHANPP was 13.2 Gt y^{-1} in 2007, which leads to an estimated planetary boundary for eHANPP of (…)18.2 Gt C y^{-1} (Fanning et al., 2022, p. 3)	

(Cont.)

Indicator	Source	Definition:	Reference
Ecological Footprint	University of Leeds – A Good Life for All Within Planetary Boundaries	The ecological footprint indicator is "It is the sum of six components (cropland, forest land, fishing grounds, grazing land, built-up land, and carbon land)" and its "data account for trade by adding imports and subtracting exports" (Fanning et al., 2022, p. 3)	University of Leeds – A Good Life for All Within Planetary Boundaries / Download Data / Supplementary Information
Material Footprint		This indicator "measures the amount of used material extraction (minerals, fossil fuels, and biomass) associated with the final demand for goods and services, regardless of where that extraction occurs" (Fanning et al., 2022, p. 4)	
Sense of purpose	Statista	Data results of an online survey run with employees 18 years of age or older, in companies with 500+ employees about feeling a sense of purpose from their organization (Statista Research Department, 2022).	Statista / Services / Business Services
Sense of accomplishment	ESS – European Social Survey	Data results of the questionnaire ESS round 6 – 2012: Personal wellbeing, democracy to the question "Using this card, please tell me to what extent you agree or disagree with each of the following statements. Most days I feel a sense of accomplishment from what I do" (ESS - European Social Survey, 2013b)	ESS – European Social Survey / ESS round 6 - 2012. Personal wellbeing, democracy

(Cont.)

Indicator	Source	Definition:	Reference
Physical activity (recurrent practice of any sport)	WHO – World Health Organisation Observatory, Indicators	"Prevalence of insufficient physical activity among adults aged 18+ years (age-standardized estimate) (%)" (The Global Health Observatory, n.d.)	WHO - The Global Health Observatory, Indicators
Energetic Poverty	Eurostat (Inability to keep home adequately warm - EU-SILC survey)	"The share of the population who declare if they can afford or not to keep their homes at a suitable temperature. This situation is usually considered one of the most obvious consequences of being in energy poverty" (Directorate-General for Energy, 2023)	European Commission / Energy Poverty Advisory Hub

Source: (*About Crime Indices At This Website*, n.d.; *Psychiatrists Working in Mental Health Sector (per 100,000)*, 2019; Directorate-General for Energy, 2023; ESS - European Social Survey, 2013a, 2020; Eurofound, 2022; Eurostat, 2023; Fanning et al., 2022; Mikulic, 2023; Ortiz-Ospina, 2020; Statista Research Department, 2022, 2023; Stewart, 2022, 2023; The Global Health Observatory, n.d.; WHO - World Health Organization, n.d.; WHO, 2019)

2. Proposed Dashboard Dimensions:

Table 31 – Considered Dimensions in the Proposed Dashboard

Dimension	Concept	Authors	Comments
Income and Wealth	This dimension refers to "income after taxes" and while transfers refer to "what households have available to spend". Household consumption expenditures refers to "'realised' material conditions" and wealth is the "buffer that can help (…) consumption and enable longer-term investments" (OECD, 2023b, p. 2)	OECD	The indicators Household Wealth and Financial Insecurity have no available data in the sample for which the dimension is not complete to its definition

(Cont.)

Dimension	Concept	Authors	Comments
Work and Job Quality	"Work refers to productive activity". Job Quality refers to material and non-material aspects of working conditions. Material aspects considered are "remuneration (e.g. salary), the availability of jobs, and the risk of job loss". Non-material aspects are "quality of the working environment (…) (physical safety), the content of their job (…), the autonomy afforded, their learning opportunities, working time arrangements, and relationships with co-workers" (OECD, 2023b, p. 5)	OECD	The indicators "Labour market insecurity" and "Job strain" have no data in the available dataset for which the dimension is not fully complete to its definition. Furthermore, there is no single indicator in this dimension that addresses the "relationship with the co-workers".

(Cont.)

Dimension	Concept	Authors	Comments
Working Environment & Conditions	Added dimension to the OECD How's life dataset. The rationale behind the inclusion of this dimension to the DB is to provide measurements on the individual perceived environment inside the organizations. This dimension is translated by the indicators Paid hours, Working hours (paid and unpaid work), Company engagement, Colleagues trust, Hierarchy trust, Stress level (work related diseases), Flexibility within working hours, and Individual Value. This dimension also considers a indicator for inequality, translated through the gender pay gap.	Eurofund – European Foundation for the Improvement of Living and Working Conditions; Eurostat Data Browser; Statista.	Dimension to be statistically tested in order to find its relevancy in terms of explaining national well-being. The indicators Turn-over and Stress level had to be excluded due to unavailability of data.
Housing	Housing conditions allow the evaluation of people's "access to many different services". This dimension refers to the "quality of housing, housing affordability, and the amenities and characteristics of neighbourhoods" (OECD, 2023b, p. 8).	OECD	This dimension does not consider one indicator related to the neighbourhood

(Cont.)

Dimension	Concept	Authors	Comments
Work Life Balance	This dimension refers to the capacity of being able to "combine family commitments, leisure, and work" (OECD, 2023b, p. 10)	OECD	Work Life dimension only has one indicator with data in the available dataset, which is Satisfaction with Time Use. As this is probably the most relevant indicator to explain the dimension aim, we believe this dimension is not hindered.
Health	Health dimension aims to translate life as "unencumbered by physical or mental illness, and the ability to participate in activities that people value" (OECD, 2023b, p. 12)	OECD	Although in its definition the dimension Health considers mental health through the indicators "Deaths from suicide, alcohol abuse and drug overdose" , "Depressive symptoms" and "Symptoms of anxiety", the former one to be included in the next wave of DB updates (OECD, 2023b, pp. 12–14), the fact is these indicators show no data, for which the analysis can only be done through the original OECD indicators "Life expectancy" and "Perceived health".

(Cont.)

Dimension	Concept	Authors	Comments
Mental Health	Added (sub-)dimension to the OECD How's life dataset. The rationale behind the inclusion of this dimension to the DB is to provide measurements on mental health, since the original Health dimension does not cover this health aspect. This dimension is translated by the indicators Hours of Sleep, National Consumption Anxiolytics, National consumption of Anti-Depressants, Burn-out and stress related hospital occurrences, Number of Psychiatric and Psychological consultations per year, Number of Professionals (psychiatrists psychologists and psychotherapists).	Our World In Data - University of Oxford; Statista; Eurostat Data Browser; WHO (World Health Organisation) - The Global Health Observatory, Indicators	The indicators Hours of Sleep, and Number of Psychiatric and Psychological consultations per year didn't have available data which prevented these indicators to be included in the data sample
Knowledge & Skills	This dimension measures the people's cognitive skills in terms of reading, maths and science (OECD, 2023b, pp. 14–16).	OECD	The DB doesn't have available data regarding Adults.

(Cont.)

Dimension	Concept	Authors	Comments
Social Connections	This dimension captures "the quantity of social interactions (e.g., frequency and amount of time individuals spend with household members, their family, friends, colleagues, and other known persons), their quality (e.g. satisfaction with social interactions, perceived loneliness), and the support (e.g. emotional and financial) provided by these connections" (OECD, 2023b, p. 16)	OECD	The indicator "Time spent in social interactions" has no available data in the dataset for which the quantity part of the dimension definition cannot be considered.

(Cont.)

Dimension	Concept	Authors	Comments
Civic Engagement	Civic Engagement dimension refers to the ability of people to "take part in a range of important civic activities that enable them to shape the society they live in." (OECD, 2023b, p. 18)	OECD; ESS – European Social Survey / ESS round 9 - 2018. Timing of life, Justice and fairness	This dimension has no available data in any of the proposed indicators for the analysis to be run in this dataset. Hence, and because we think this is an important dimension, we have decided to include the indicators Trust in the Legal System, Trust in the Police, Trust in the Politicians, and Trust in the Political Parties. The indicator Corruption was also transferred into this dimension from its original OECD placement under Resources for Future Well-Being: Social Capital dimension

(Cont.)

Dimension	Concept	Authors	Comments
Environment	Originally in the OECD How's Life Dataset, this dimension was revamped in terms of indicators to consider the indicators from the Planetary Boundaries model (Steffen et al., 2015); Under this dimension we have CO_2 Emissions, Phosphorus, Nitrogen, Blue Water, eHANPP, Ecological Footprint and Material Footprint as indicators. The aim of this dimension is to provide the values against the defined threshold to understand, per country and per indicator, if the indicator is under or overshoot. Any indicator in overshoot compromises well-being.	OECD; University of Leeds – A Good Life for All Within Planetary Boundaries	The defined thresholds are subject to debate among scientists either because they are considered too conservative or too aggressive. Lacking of an alternative tool that can provide us the national threshold concept, or alternative thresholds we can base ourselves upon, we have opted to proceed with this model.

(Cont.)

Dimension	Concept	Authors	Comments
Safety	This dimension is about "freedom from harm, whether that harm comes in the form of crime, conflict, violence, terrorism, oppression, accidents or natural disasters" (OECD, 2023b, p. 20) and includes the indicators Homicides, Feeling Safe at Night and Road Deaths (id. pp. 20-21).	OECD; Numbeo.	To the indicators already available in the OECD dataset we've included the indicator Crime Rate, providing people's perception on Crime in their geography.
Subjective Well-Being	Subjective Well-Being dimension refers to "good mental states, and how people experience their lives" (OECD, 2023b, p. 21)	OECD; WHO – World Health Organisation Observatory, Indicators; ESS – European Social Survey / ESS round 6 - 2012. Personal wellbeing, democracy	To the OECD indicators Life Satisfaction, Negative Affect Balance, and Subjective Well-Being Inequalities, we proposed to add the indicators (Insufficient) Physical Activity and Accomplishment

(Cont.)

Dimension	Concept	Authors	Comments
Resources for Future Well-Being: Natural Capital	Natural capital comprises "naturally occurring assets and ecosystems, from tradable items such as minerals and timber through to oceans and the atmosphere" (OECD, 2023b, p. 24). The indicators considered under this dimension are: Natural and semi-natural land cover, Loss of natural and semi-natural land cover, Gain of natural and semi-natural land cover, Intact forest landscapes, Intact forest landscapes, Protected areas (terrestrial), Protected areas (marine), Red List Index of threatened species, Greenhouse gas emissions, Carbon footprint, Renewable energy, Soil nutrient balance, Water stress (internal), Water stress (total), Material footprint and Recycling rate (id. pp. 24-28)	OECD	Of all the listed indicators under this dimension, the indicators Protected areas – marine, Soil nutrient balance, Water stress (internal resources) and Water stress (total renewable resources) have no available data in the dataset.

(Cont.)

Dimension	Concept	Authors	Comments
Resources for Future Well-Being: Human Capital	This dimension refers to the "skills, competencies (including education and tacit knowledge) and health status of individuals" since health and education are considered to contribute "extensively to the production of other well-being outcomes" (OECD, 2023b, p. 28).	OECD	The indicators Premature mortality, Smoking prevalence and Obesity prevalence have no available data in the data set for which the health part of this dimension cannot be considered.
Resources for Future Well-Being: Social Capital	Social Capital dimension refers to "the social norms, shared values and institutional arrangements that foster co-operation among population groups" (OECD, 2023b, p. 22).	OECD	The only indicator with available data in the DB is Corruption for which this dimension, according to its definition, cannot be considered represented.

(Cont.)

Dimension	Concept	Authors	Comments
Resources for Future Well-Being: Economic Capital	This dimension considers produced capital such as "man-made tangible assets such as roads, railways, buildings and machinery; intellectual property such as Research and Development expenditure, computer software and art works; and inventories of final and intermediate goods" as well as financial capital such as "financial assets such as currency and deposits, equity, securities and derivatives, and liabilities in the form of loans and debt securities" (OECD, 2023b, p. 30).	OECD	

Source: (*About Crime Indices At This Website*, n.d.; *Psychiatrists Working in Mental Health Sector (per 100,000)*, 2019; ESS - European Social Survey, 2013b, 2020; Eurofund, 2023; Eurostat, 2023; Fanning et al., 2022; Mikulic, 2023; OECD, 2023b; Ortiz-Ospina, 2020; Statista Research Department, 2022, 2023; Stewart, 2023; The Global Health Observatory, n.d.)

3. Data Sources

The data used in this research was extracted from different sources. The vast majority of the indicators was sourced from the OECD How's Life database but in order to get data for other indicators we had to source it from different databases.

The below table provides a detailed view on the sourcing of the data as well as the date of the extraction:

Table 32 – Data Sources

Indicator	**Source**	**Available in:**	**Year of Data**	**Last Update**	**Extracted on**
Household income	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2018	Feb-22	05 June 2022
Household wealth					
Income and wealth inequalities: gaps between population groups					
Life expectancy at birth					
Perceived health					
Disability adjusted life years (DALY)	World Health Organization (WHO)	https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates			05 June 2022

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Health inequalities: gaps between population groups	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2018	Feb-22	05 June 2022
Hours of sleep	Our World In Data - University of Oxford	https://ourworldindata.org/search?q=sleep	2002	Jun-2018	05 June 2022
National consumption of anxiolytics and antidepressants (per year)	Statista	https://www.statista.com/statistics/1238078/anxiolytics-pharmaceutical-consumption-in-europe/[31]; https://www.statista.com/statistics/283072/antidepressant-consumption-in-selected-countries/[32]	2020		05 June 2022
Burn-out and stress related hospital occurrences	Statista	https://www.statista.com/statistics/1249649/experiences-of-burnout-in-europe/; https://smallbusinessprices.co.uk/european-employee-burnout/	2021		05 June 2022

[31] Except for Belgium and Switzerland for which we used the average consumption of the sample (24,3) as a proxy, since data was not available.

[32] Except for Denmark, France, Poland and Switzerland whose data was extracted on 23rd of September 2022 from the World Population review available in https://worldpopulationreview.com/country-rankings/antidepressant-use-by-country and for which the data refers to 2022

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Health inequalities: gaps between population groups	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2018	Feb-22	05 June 2022
Hours of sleep	Our World In Data - University of Oxford	https://ourworldindata.org/search?q=sleep	2002	Jun-2018	05 June 2022
National consumption of anxiolytics and antidepressants (per year)	Statista	https://www.statista.com/statistics/1238078/anxiolytics-pharmaceutical-consumption-in-europe/[33]; https://www.statista.com/statistics/283072/antidepressant-consumption-in-selected-countries/[34]	2020		05 June 2022
Burn-out and stress related hospital occurrences	Statista	https://www.statista.com/statistics/1249649/experiences-of-burnout-in-europe/; https://smallbusinessprices.co.uk/european-employee-burnout/	2021		05 June 2022

[33] Except for Belgium and Switzerland for which we used the average consumption of the sample (24,3) as a proxy, since data was not available.

[34] Except for Denmark, France, Poland and Switzerland whose data was extracted on 23rd of September 2022 from the World Population review available in https://worldpopulationreview.com/country-rankings/antidepressant-use-by-country and for which the data refers to 2022

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Deaths from suicide, acute alcohol abuse, and drug overdose	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2018	Feb-22	05 June 2022
Psychiatric and Psychological consultations	Eurostat Data Browser	https://ec.europa.eu/eurostat/databrowser/view/hlth_ehis_am6e/default/table?lang=en			05 June 2022
Number of professionals	WHO - The Global Health Observatory, Indicators[35]	https://www.who.int/data/gho/data/indicators/indicator-details/GHO/psychiatrists-working-in-mental-health-sector-(per-100-000)			05 June 2022

[35] Except for Austria, Estonia, Slovak Republic and Slovenia.
For Austria the data was extracted on 23rd of September from WHO Mental Atlas (WHO - World Health Organization, 2005) and the data refers to 2005
For Slovenia the data was extracted on 23rd of September from the WHO regional report (WHO - World Health Organization, 2020, p. 8) and refers to 2020
For Slovak Republic the data was extracted on 23rd of September from the Slovak Republic Mental Health Care report (Dragašek & Nawka, 2010, p. 89) and refers to 2004
For Estonia the data was extracted on 23rd of September from the WHO Mental Atlas (WHO - World Health Organization, 2017) and the data refers to 2017

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Cognitive skills at age 15: PISA scores in maths, reading and science	OECD.Stat - How's Life - Well-Being[36]	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2018	Feb-22	05 June 2022
Cognitive skills of adults: PIAAC mean scores in literacy and numeracy					
Knowledge and skills inequalities: gaps between population groups					
Job insecurity	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?DataSetCode=JOBQ[37]	2010		05 June 2022

[36] Except for Sweden for which the source was (Eklund et al., 2006, p. 14), regarding the year 2000 and extracted on 23rd of September 2022.

[37] Except for Luxembourg for which we've used an average of the sample as a proxy to overcome the lack of data

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Paid hours	Eurofund – European Foundation for the Improvement of Living and Working Conditions	https://www.eurofound.europa.eu/data/european-working-conditions-survey	2012		05 June 2022
Working hours (includes care givers, housework, etc.)					
Company engagement					
Colleagues trust	Eurofund – European Foundation for the Improvement of Living and Working Conditions	https://www.eurofound.europa.eu/data/european-working-conditions-survey	2012		05 June 2022
Hierarchy trust					
Stress level	Eurostat	https://ec.europa.eu/eurostat/databrowser/view/hsw_pb4/default/table?lang=en	2013		05 June 2022
Flexibility (time off, medical appointments, remote work; working hours, etc.)	Eurofund – European Foundation for the Improvement of Living and Working Conditions	https://www.eurofound.europa.eu/data/european-working-conditions-survey	2012		05 June 2022
Individual value (self perception of how much the institution values the individual)		https://www.eurofound.europa.eu/data/european-working-conditions-survey			

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Inequalities in the working environment (gender, ethnicity, salaries, promotions, etc.)	Statista[38]	https://www.statista.com/statistics/1203135/gender-pay-gap-in-europe-by-country/; http://opalpro.cs.upb.de/pt_BR/dataset/2012_-_survey_-_the_gender_inequalities_in_the_european_union			05 June 2022
Time off	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2018	Feb-2022	05 June 2022
Long unpaid working hours					
Gender gap in total hours worked					
Satisfaction with time use					
Work-life balance inequalities: gaps between population groups					
Voter turnout					

[38] Except for Hungary for which we've used an average of the sample to overcome the lack of data

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Trust in the Legal System (trstlgl)	ESS – European Social Survey	https://ess-search.nsd.no/en/study/bdc7c350-1029-4cb3-9d5e-53f668b8fa74	2018		16 June 2022
Trust in the Police (trstplc)					
Trust in the Polititians (trstplt)					
Trust in the Polititcal Parties (trstprt)					
Civic engagement inequalities: gaps between population groups	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2018	Feb-2022	05 June 2022
Social support					
Time spent in social interactions					
Satisfaction with personal relationships					
Social connections inequalities: gaps between population groups					

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Crime rate	Numbeo	https://www.numbeo.com/crime/rankings_by_country.jsp?title=2021&region=150	2021		16 June 2022
Homicides	OECD.Stat - How's Life - Well-Being[39]	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2018	Feb-2022	05 June 2022
Feeling safety when walking alone at night					
Road deaths					
Safety inequalities: gaps between population groups					
CO2 Emissions Variance	University of Leeds – A Good Life for All Within Planetary Boundaries	https://goodlife.leeds.ac.uk/national-snapshots/countries/; https://goodlife.leeds.ac.uk/related-research/ecological-breakdown/	2011		06 June 2022
Phosphorus Variance					
Nitrogen Variance					
Blue Water Variance					

[39] Exception is for Belgium, Germany Poland, Slovenia and Sweden whose data regarding the homicides variable comes from World Development Indicators (Word Bank Data) https://data.worldbank.org/indicator/VC.IHR.PSRC.P5?locations=FI; For Belgium the variable homicides refer to the year 2017; Germany, Poland, Slovenia and Sweden the data refers to 2018; The data was extracted in June 2022 and was last updated in May 2022.
Exception as well for Road Deaths
Finland data was retrieved on 23rd of September 2022 from Atlas Mundial de Dados over https://pt.knoema.com/atlas/Finl%c3%a2ndia/topics/Transporte/Acidente-rodovi%c3%a1rios/Mortes-no-tr%c3%a2nsito-casa-100000-habitantes and refers to 2015; Lithuania was retrieved from Trading Economics https://tradingeconomics.com/lithuania/mortality-caused-by-road-traffic-injury-per-100000-people-wb-data.html sourced from the World Bank collection of development indicators and refer to 2019; Slovenia data was retrieved on 23rd of September 2022 from the 2021 report (International Transport Forum, 2021) and the data is regarding 2020.

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
eHANPP Variance Ecological Footprint Material Footprint	University of Leeds – A Good Life for All Within Planetary Boundaries	https://goodlife.leeds.ac.uk/national-snapshots/countries/; https://goodlife.leeds.ac.uk/related-research/ecological-breakdown/	2011		06 June 2022
Life Satisfaction Negative affect balance	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2021	Feb-2022	05 June 2022
Sense of purpose	Statista	https://www.statista.com/statistics/1017365/employees-sense-purpose-organization-country/			05 June 2022
Sense of accomplishment	ESS – European Social Survey	https://ess-search.nsd.no/en/study/7ccf7f30-fd1a-470a-9b90-4c91b0bc7438	2012	2018	16 June 2022
Physical activity (recurrent practice of any sport)	WHO - The Global Health Observatory, Indicators	https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-insufficient-physical-activity-among-adults-aged-18-years-(age-standardized-estimate)-(-)	2016	2018	06 June 2022
Subjective well-being inequalities: gaps between population groups Overcrowding rate Housing affordability	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2021	Feb-2022	05 June 2022

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Housing cost overburden	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2021	Feb-2022	05 June 2022
Poor households without access to basic sanitary facilities					
Households with high-speed internet access					
Energetic Poverty	Eurostat (Inability to keep home adequately warm - EU-SILC survey)	http://appsso.eurostat.ec.europa.eu/nui/show.do?query=BOOKMARK_DS-056346_QID_-245E23C4_UID_-3F171EB0&layout=TIME,C,X,0;GEO,L,Y,0;HHTYP,L,Z,0;INCGRP,L,Z,1;UNIT,L,Z,2;INDICATORS,C,Z,3;&zSelection=DS-056346INCGRP,TOTAL;DS-056346UNIT,PC;DS-056346HHTYP,TOTAL;DS-056346INDICATORS,OBS_FLAG;&rankName1=HHTYP_1_2_-1_2&rankName2=TIME_1_0_0_0&rankName3=UNIT_1_2_-1_2&rankName4=GEO_1_2_0_1&rankName5=INDICATORS_1_2_-1_2&rankName6=INCGRP_1_2_-1_2&sortC=ASC_-1_FIRST&rStp=&cStp=&rDCh=&cDCh=&rDM=true&cDM=true&footnes=false&empty=false&wai=false&time_mode=ROLLING&time_most_recent=false&lang=EN&cfo=%23%23%23%2C%23%23%23.%23%23%23%23;	2020	16-May-2022	06 June 2022

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Employment rate (ages 25 to 64)	OECD.Stat - How's Life - Well-Being[40]	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2021	Feb-2022	05 June 2022
Youth not in employment, education or training					
Long-term unemployment rate					
Earnings					
Long hours in paid work					
Inequalities in work and job quality: gaps between population groups					
Produced fixed assets					
Intellectual property assets					
Gross fixed capital formation					
Investment in R&D					

[40] Except for Estonia, Finland and Lithuania. For all three countries data was extracted on 23rd of September 2022 from the World Bank available in https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?locations=EE and the data refers to 2020

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Financial net worth of the total economy	OECD.Stat - How's Life - Well-Being[41]	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2021	Feb-2022	05 June 2022
Financial net worth of general government					
Household debt					
Leverage of the banking sector					
Natural and semi-natural land cover					
Protected areas – terrestrial					
Protected areas – marine					
Threatened species(Red List Index)					
Greenhouse gas emissions (domestic production)	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2021	Feb-2022	05 June 2022
Carbon footprint					

[41] Except for Estonia, Finland and Lithuania. For all three countries data was extracted on 23rd of September 2022 from the World Bank available in https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?locations=EE and the data refers to 2020

(Cont.)

Indicator	Source	Available in:	Year of Data	Last Update	Extracted on
Renewable energy	OECD.Stat - How's Life - Well-Being	https://stats.oecd.org/Index.aspx?datasetcode=HSL	2021	Feb-2022	05 June 2022
Soil nutrient balance					
Water stress (internal resources)					
Water stress (total renewable resources)					
Recycling rate					
Education attainment among young adults					
Labour underutilization rate					
Premature mortality					
Smoking prevalence					
Obesity prevalence					
Corruption					

The indicator inequalities in the work environment is not as broad and comprehensive as we initially targeted for, as we were hoping to reflect the ethnicity and faith

inequalities in the work environment as well. The lack of data regarding these two aspects lead us to use the closest indicator we were able to identify, as it only considers the gender inequalities in the workplace.

The indicators extracted from the European Social Survey Trust in the Legal System, Trust in the Police, Trust in the Politicians and Trust in the Political Parties are part of the round 9, edition 3.1, regarding 2018[42]. The indicators are measured in a scale from 0 (zero) to 10 (ten) where 0 (zero) is “No trust at all” and 10 (ten) is “Complete Trust” (ESS - European Social Survey, 2019). We have applied the means to each of the indicators to obtain 1 reference value per country. The result is summarized by the below board:

[42] ESS9 - integrated file, edition 3.1 [Data set]. Sikt - Norwegian Agency for Shared Services in Education and Research. https://doi.org/10.21338/ESS9E03_1

Table 33 – European Social Survey' Trust in the Legal System, Trust in the Police, Trust in the Politicians and Trust in the Political Parties means to 1 reference value per country

		Trust in the Legal System (trstlgl) Mean	Trust in the Police (trstplc) Mean	Trust in the Polititians (trstplt) Mean	Trust in the Polititcal Parties (trstprt) Mean
Countries	AT	6.67	7.40	4.24	4.13
	BE	5.34	6.54	4.26	4.26
	BG	2.99	3.80	2.12	2.14
	CH	6.80	7.37	5.37	5.25
	CY	4.42	5.32	2.83	2.73
	CZ	5.16	5.88	3.56	3.55
	DE	6.13	7.10	3.96	3.99
	DK	7.68	8.00	5.20	5.30
	EE	5.93	7.03	3.89	3.75
	ES	4.78	6.76	2.55	2.50
	FI	7.17	8.12	4.90	5.03
	FR	5.25	6.47	3.54	3.04
	GB	5.72	6.58	3.43	3.50
	HR	2.53	5.23	1.68	1.88
	HU	5.52	6.40	3.93	3.78
	IE	5.25	6.28	3.93	3.82
	IS	6.13	7.60	4.49	4.31
	IT	5.36	6.65	3.04	2.93
	LT	4.65	6.32	3.11	2.83
	LV	4.29	5.58	2.69	2.55
	ME	4.30	5.03	3.02	3.00
	NL	6.64	7.02	5.39	5.38
	NO	7.51	7.63	5.28	5.40
	PL	4.32	5.76	3.11	3.16
	PT	4.17	6.20	2.73	2.81
	RS	3.88	4.99	2.82	2.63
	SE	6.51	7.00	4.91	4.99
	SI	3.92	6.15	2.67	2.70
	SK	4.19	5.16	3.35	3.51

Source: European Social Survey round 9, edition 3.1, regarding 2018

In which the country codes stand for:

Albania	AL	Latvia	LV
Austria	AT	Lithuania	LT
Belgium	BE	Luxembourg	LU
Bulgaria	BG	Netherland	NL
Croatia	HR	Norway	NO
Cyprus	CY	Poland	PL
Czech Republic	CZ	Portugal	PT
Denmark	DK	Romania	RO
Estonia	EE	Russian Federation	RU
Finland	FI	Serbia	RS
France	FR	Slovakia	SK
Germany	DE	Slovenia	SI
Greece	GR	Spain	ES
Hungary	HU	Sweden	SE
Iceland	IS	Switzerland	CH
Ireland	IE	Turkey	TR
Israel	IL	Ukraine	UA
Italy	IT	United Kingdom	GB
Kosovo	XK		

Figure 38 – Country codes for participant countries in the European Social Survey round

Source: (ESS - European Social Survey, 2019, p. 22)

The indicator Sense of Accomplishment is part of round 6, edition 2.4 regarding the year of 2012[43].

The indicators are measured in a scale from 1 (one) to 5 (five) where 1 (one) is “Agree Strongly” and 5 (five) is “Disagree Strongly” (ESS - European Social Survey, 2013a). We have applied the means to the indicator to obtain 1 reference value per country. The result is summarized by the below board:

[43] European Social Survey European Research Infrastructure (ESS ERIC). (2021). ESS9 - integrated file, edition 3.1 [Data set]. Sikt - Norwegian Agency for Shared Services in Education and Research. https://doi.org/10.21338/ESS9E03_1

Table 34 – European Social Survey' Sense of Accomplishment means to 1 reference value per country

		Sense of accomplishment (ACCDNG) Mean
Country	AL	2.23
	BE	2.17
	BG	2.35
	CH	1.92
	CY	2.26
	CZ	2.36
	DE	2.00
	DK	1.96
	EE	2.38
	ES	2.43
	FI	2.20
	FR	2.16
	GB	2.29
	HU	2.31
	IE	2.22
	IL	2.18
	IS	2.18
	IT	2.13
	LT	2.34
	NL	2.27
	NO	2.06
	PL	2.22
	PT	2.38
	RU	2.60
	SE	2.00
	SI	2.22
	SK	2.44
	UA	2.30
	XK	2.19

Source: European Social Survey round 6, edition 1.4, October 2013

In which the country codes are the same ones as depicted in Figure 32 above.

The indicators under the Environment dimension follow the Planetary Boundaries model and the values considered in this index are the variance to the respective country threshold, available automatically in the Leeds university internet page mentioned above.

The indicator sense of purpose is also restricted in comparison to what we initially targeted for. The values behind this indicator consider the sense of purpose in an organization, the proxy indicator we had to use, given the lack of available data in regards to a more global sense of purpose in life.

4. Database Composition

The database was composed of the following indicators:

Table 35 – OECD How's Life Indicator Full Dataset Extracted

Indicators
OECD_Household income
OECD_Household Wealth
OECD_Relative income poverty
OECD_Difficulty making ends meet
OECD_Financial Insecurity
OECD_Employment rate
OECD_Gender wage gap
OECD_Long-term unemployment rate
OECD_Youth not in employment, education or training
OECD_Long hours in paid work
OECD_Earnings
OECD_Overcrowding rate
OECD_Housing affordability
OECD_Housing cost overburden
OECD_Poor households without access to basic sanitary facilities
OECD_Households with internet access at home
OECD_Time off
OECD_Long Unpaid working hours
OECD_Gender gap in working hours
OECD_Satisfaction with time use_mean
OECD_Life Expectancy at Birth
OECD_Perceived health_mean
OECD_Deaths from suicide, alcohol, drugs
OECD_Student skills (reading)_mean
OECD_Student skills (maths)_mean

Indicators (Cont.)
OECD_Student skills (science)_mean
OECD_Adult skills (numeracy)
OECD_Social support_mean
OECD_Time spent in social interactions
OECD_Satisfaction with personal relationships_mean
OECD_Air Pollution
OECD_Homicides
OECD_Feeling safe at night_mean
OECD_Road deaths
OECD_Life satisfaction_mean
OECD_Negative affect balance
OECD_Labour market insecurity
OECD_Produced fixed assets
OECD_Intellectual property assets
OECD_Investment in R&D
OECD_Financial net worth of the total economy
OECD_Household debt
OECD_Financial net worth of government
OECD_Leverage of the banking sector
OECD_Educational attainment among young adults
OECD_Labour underutilisation rate
OECD_Premature mortality
OECD_Smoking prevalence
OECD_Obesity prevalence
OECD_Trust in others
OECD_Trust in the police
OECD_Trust in government
OECD_Corruption
OECD_Natural and semi-natural land cover

Indicators (Cont.)
OECD_Protected areas - terrestrial
OECD_Protected areas - marine
OECD_Threatened species(Red List Index)
OECD_Greenhouse gas emissions (domestic production)
OECD_Carbon footprint
OECD_Renewable energy
OECD_Soil nutrient balance
OECD_Water stress (internal resources)
OECD_Water stress (total renewable resources)
OECD_Recyling rate
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Men
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Women
OECD_Inequalities_Horizontal inequality Social Connections: Time Spent in Social Interactions - Men
OECD_Inequalities_Horizontal inequality Social Connections: Time Spent in Social Interactions - Women
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Men
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Women
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Young
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support – Middle Aged
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Old

Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Age Social Connections: Time Spent in Social Interactions - Young
OECD_Inequalities_Horizontal inequality Age Social Connections: Time Spent in Social Interactions - Middle Aged
OECD_Inequalities_Horizontal inequality Age Social Connections: Time Spent in Social Interactions - Old
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Middle Aged
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Old
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Young
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Middle Aged
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Old
OECD_Inequalities_Horizontal inequality Education Social Connections: Social Support - Primary
OECD_Inequalities_Horizontal inequality Education Social Connections: Social Support - Secondary
OECD_Inequalities_Horizontal inequality Education Social Connections: Social Support - Tertiary
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Primary
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Secondary

Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Tertiary
OECD_Inequalities_Vertical inequality Social Connections: Satisfaction with personal relationships
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Men
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Women
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Men
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Women
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Young
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Middle Aged
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Old
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Young
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Middle Aged
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Old
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Primary

Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Secondary
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Terciary
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Primary
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Secondary
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Terciary
OECD_Inequalities_Vertical inequality Subjective Well-being: Life Satisfaction
OECD_Inequalities_Vertical inequality Income and Wealth: Household Wealth
OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Men
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Women
OECD_Inequalities_Horizontal inequality Health: Deaths from suicide, alcohol, drugs - Men
OECD_Inequalities_Horizontal inequality Health: Deaths from suicide, alcohol, drugs - Women
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Young
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Middle
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Old
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Primary
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Secondary

Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Tertiary
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (reading) - Men
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (reading) - Women
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Men
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Women
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Men
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Women
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Adult skills (numeracy) - Men
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Adult skills (numeracy) - Women
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Adult skills (literacy) - Men
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Adult skills (literacy) - Women
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (numeracy) – Young
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (numeracy) - Middle Aged

Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (numeracy) – Old
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (literacy) – Young
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (literacy) - Middle Aged
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (literacy) - Old
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Primary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Secondary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Tertiary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Primary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Secondary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Tertiary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Primary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Secondary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Tertiary

Indicators (Cont.)
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (reading)
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (maths)
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (science)
OECD_Inequalities_Vertical inequality Knowledge and Skills: Adult skills (numeracy)
OECD_Inequalities_Vertical inequality Knowledge and Skills: Adult skills (literacy)
OECD_Inequalities_Horizontal inequality Worklife balance: Time off - Men
OECD_Inequalities_Horizontal inequality Worklife balance: Time off - Women
OECD_Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Men
OECD_Inequalities_Horizontal inequality Age Worklife balance: Time off - Young
OECD_Inequalities_Horizontal inequality Age Worklife balance: Time off - Middle Aged
OECD_Inequalities_Horizontal inequality Age Worklife balance: Time off - Old
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Young
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Middle Aged
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Old
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Primary
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Secondary
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Tertiary
OECD_Inequalities_Vertical inequality Worklife balance: Satisfaction with time use
OECD_Inequalities_Horizontal inequality Civic Engagement: Voter turnout - Men

Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Civic Engagement: Voter turnout - Women
OECD_Inequalities_Horizontal inequality Age Civic Engagement: Voter turnout - Young
OECD_Inequalities_Horizontal inequality Age Civic Engagement: Voter turnout - Middle Aged
OECD_Inequalities_Horizontal inequality Age Civic Engagement: Voter turnout - Old
OECD_Inequalities_Horizontal inequality Education Civic Engagement: Voter turnout -Primary
OECD_Inequalities_Horizontal inequality Education Civic Engagement: Voter turnout -Secondary
OECD_Inequalities_Horizontal inequality Education Civic Engagement: Voter turnout -Tertiary
OECD_Inequalities_Horizontal inequality Safety: Homicides - Men
OECD_Inequalities_Horizontal inequality Safety: Homicides - Women
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Men
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Women
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Young
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Middle Aged
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Old
OECD_Inequalities_Horizontal inequality Education Safety: Feeling Safe at night - Primary
OECD_Inequalities_Horizontal inequality Education Safety: Feeling Safe at night - Secondary
OECD_Inequalities_Horizontal inequality Education Safety: Feeling Safe at night - Tertiary

Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Men
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Women
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Men
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Women
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Men
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Women
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Men
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Women
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Young
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Middle Aged
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Old
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Young
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Middle Aged

Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Old
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Primary
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Secondary
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Tertiary
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Primary
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Secondary
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Tertiary
OECD_Inequalities_Vertical inequality Education Work & Job Quality: Earnings

Source: (OECD.Stat, 2018)

Resulting of the literature review we decided to add indicators to the database.

The added indicators were the following ones:

Table 36 – Indicators added to the Dataset

Added Indicators
OurWorldinData_Hours of Sleep
WHO_DALYs All Ages
Statista_Anxiolytic drug consumption
Statista_Antidepressant consumption
WHO_Number of Mental Health Professionals
Statista_Burnout
Statista_Inequalities in the work environment - Gender pay gap
Eurofund_Paid Hours Worked
Eurofund_Paid & Unpaid Hours Worked
Eurofund_Engagement with Organization
Eurofund_Colleagues Trust
Eurofund_Hierarchy Trust
Eurostat_Work Related illness
Eurofund_Flexibility Time
Eurofund_Individual Value Perception of Work
Statista_Purpose in the Organization
Eurostat_Turnover_Average Integrated
Numbeo_Crime rate
Leeds-PB_CO2 Emissions Variance to threshold
Leeds-PB_Phosphorus Variance to threshold
Leeds-PB_Nitrogen Variance to threshold
Leeds-PB_Blue Water Variance to threshold
Leeds-PB_eHANPP Variance to threshold
Leeds-PB_Ecological Footprint Variance to threshold
Leeds-PB_Material Footprint Variance to threshold
WHO_insufficient physical activity
Eurostat_energetic Poverty

Added Indicators (Cont.)
European Social Survey_Trust in the Legal System
European Social Survey_Trust in the Police
European Social Survey_Trust in the Politicians
European Social Survey_Trust in the Political Parties
European Social Survey_Feel accomplishment from what I do

Source: (*About Crime Indices At This Website*, n.d.; *Psychiatrists Working in Mental Health Sector (per 100,000)*, 2019; ESS - European Social Survey, 2013b, 2020; Eurofund, 2023; Eurostat, 2023; Giattino, Charlie; Ortiz-Ospina, 2020; Mikulic, 2023; Statista Research Department, 2022, 2023; Stewart, 2023; The Global Health Observatory, n.d.; WHO - World Health Organization, n.d.)

Based on the different sources of data[44] we have compiled a database (DB) comprising all the indicators and all the available data. The outcome was a DB of 187 indicators for 41 countries.

The countries initially considered in the database were:

[44] Please refer to the Appendix number 2, data sources table

Countries
Australia
Austria
Belgium
Canada
Chile
Colombia
Costa Rica
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Japan
Korea
Latvia
Lithuania
Luxembourg
Mexico
Netherlands
New Zealand

Countries (Cont.)
Norway
Poland
Portugal
Slovak Republic
Slovenia
Spain
Sweden
Switzerland
Turkey
United Kingdom
United Kingdom - England
United Kingdom – Northern Ireland
United States
Non OECD Economies - Brazil
Non OECD Economies - Russia
Non OECD Economies – South Africa

Table 37 – List of Countries in the original Dataset

Source: (OECD.Stat, 2018)

Once the DB was consolidated, we've evaluated the details of the DB and we have identified the lack of available data in several indicators, mostly as a result from the export of the OECD How's Life 2021 DB, which was incomplete from the source. In order to allow us to conduct the research we have eliminated the missing data as much as possible by disregarding indicators and countries. The outcome of the downsized DB was of 142 indicators for 15 countries.

The indicators we excluded are:

Table 38 – Excluded Indicators from the Dataset

Excluded Indicators
OECD_Household Wealth
OECD_Time off
OECD_Long Unpaid working hours
OECD_Gender gap in working hours
OECD_Deaths from suicide, alcohol, drugs
OECD_Adult skills (numeracy)
OECD_Time spent in social interactions
OECD_Voter turnout
OECD_Air Pollution
OECD_Premature mortality
OECD_Smoking prevalence
OECD_Obesity prevalence
OECD_Trust in others
OECD_Trust in the police
OECD_Trust in government
OECD_Inequalities_Horizontal inequality Social Connections: Time Spent in Social Interactions - Men
OECD_Inequalities_Horizontal inequality Social Connections: Time Spent in Social Interactions - Women
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Men
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Women
OECD_Inequalities_Horizontal inequality Age Social Connections: Time Spent in Social Interactions - Young

Excluded Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Age Social Connections: Time Spent in Social Interactions - Middle Aged
OECD_Inequalities_Horizontal inequality Age Social Connections: Time Spent in Social Interactions - Old
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Young
OECD_Inequalities_Vertical inequality Income and Wealth: Household Wealth
OECD_Inequalities_Horizontal inequality Health: Deaths from suicide, alcohol, drugs - Men
OECD_Inequalities_Horizontal inequality Health: Deaths from suicide, alcohol, drugs - Women
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Middle
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Adult skills (numeracy) - Men
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Adult skills (numeracy) - Women
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Adult skills (literacy) - Men
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Adult skills (literacy) - Women
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (numeracy) – Young
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (numeracy) - Middle Aged
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (numeracy) – Old

Excluded Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (literacy) – Young
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (literacy) - Middle Aged
OECD_Inequalities_Horizontal inequality Age Knowledge and Skills: Adult skills (literacy) - Old
OECD_Inequalities_Vertical inequality Knowledge and Skills: Adult skills (numeracy)
OECD_Inequalities_Vertical inequality Knowledge and Skills: Adult skills (literacy)
OECD_Inequalities_Horizontal inequality Worklife balance: Time off - Men
OECD_Inequalities_Horizontal inequality Worklife balance: Time off - Women
OECD_Inequalities_Horizontal inequality Age Worklife balance: Time off - Young
OECD_Inequalities_Horizontal inequality Age Worklife balance: Time off - Middle Aged
OECD_Inequalities_Horizontal inequality Age Worklife balance: Time off - Old
OECD_Inequalities_Horizontal inequality Civic Engagement: Voter turnout - Men
OECD_Inequalities_Horizontal inequality Civic Engagement: Voter turnout - Women
OECD_Inequalities_Horizontal inequality Age Civic Engagement: Voter turnout - Young
OECD_Inequalities_Horizontal inequality Age Civic Engagement: Voter turnout - Middle Aged
OECD_Inequalities_Horizontal inequality Age Civic Engagement: Voter turnout - Old
OECD_Inequalities_Horizontal inequality Education Civic Engagement: Voter turnout -Primary
OECD_Inequalities_Horizontal inequality Education Civic Engagement: Voter turnout -Secondary
OECD_Inequalities_Horizontal inequality Education Civic Engagement: Voter turnout -Tertiary

Excluded Indicators (Cont.)
OECD_Inequalities_Horizontal inequality Safety: Homicides - Men
OECD_Produced fixed assets
OECD_Intellectual property assets
OECD_Gross fixed capital
OECD_Investment in R&D
OECD_Financial net worth of the total economy
OECD_Household debt
OECD_Financial net worth of government
OECD_Leverage of the banking sector
OECD_Educational attainment among young adults
OECD_Labour underutilisation rate
OECD_Natural and semi-natural land cover
OECD_Protected areas - terrestrial
OECD_Threatened species(Red List Index)
OECD_Greenhouse gas emissions (domestic production)
OECD_Carbon footprint
OECD_Renewable energy
OECD_Recyling rate
OurWorldInData_Hours Of Sleep
Eurostat_Number of Mental Health Consultations
Statista_Burnout
Statista_Purpose in the Organization

The countries we excluded are:

Table 39 – Excluded Countries from the Dataset

Excluded Countries
Australia
Austria
Canada
Chile
Colombia
Costa Rica
Czech Republic
Greece
Iceland
Ireland
Israel
Italy
Japan
Korea
Latvia
Luxembourg
Mexico
Netherlands
New Zealand
Norway
Turkey
United Kingdom
United States
Brazil
Russia
South Africa

Hence, the final database composition is as follows in terms of indicators:

Table 40 – Indicators Final Composition in the DB

Final Indicator Composition in the Database
OECD_Household income
OECD_Relative income poverty
OECD_Difficulty making ends meet
OECD_Employment rate
OECD_Gender wage gap
OECD_Long-term unemployment rate
OECD_Youth not in employment, education or training
OECD_Long hours in paid work
OECD_Earnings
OECD_Overcrowding rate
OECD_Housing affordability
OECD_Housing cost overburden
OECD_Poor households without access to basic sanitary facilities
OECD_Households with internet access at home
OECD_Satisfaction with time use_mean
OECD_Life Expectancy at Birth
OECD_Perceived health_mean
OECD_Student skills (reading)_mean
OECD_Student skills (maths)_mean
OECD_Student skills (science)_mean
OECD_Social support_mean

Final Indicator Composition in the Database (Cont.)
OECD_Satisfaction with personal relationships_mean
OECD_Homicides
OECD_Feeling safe at night_mean
OECD_Road deaths
OECD_Life satisfaction_mean
OECD_Negative affect balance
OECD_Trust in government
OECD_Corruption
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Men
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Women
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Men
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Women
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Young
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Middle Aged
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Old
OECD_Inequalities_Horizontal inequality Education Social Connections: Social Support - Secondary
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Primary
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Secondary

Final Indicator Composition in the Database (Cont.)
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Tertiary
OECD_Inequalities_Vertical inequality Social Connections: Satisfaction with personal relationships
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Men
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Women
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Men
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Women
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Young
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Middle Aged
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Old
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Young
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Middle Aged
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Old
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Primary

Final Indicator Composition in the Database (Cont.)
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Secondary
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Terciary
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Primary
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Secondary
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Tertiary
OECD_Inequalities_Vertical inequality Subjective Well-being: Life Satisfaction
OECD_Inequalities_Vertical inequality Income and Wealth: Household Wealth
OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Men
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Women
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Young
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Old
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Primary
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Secondary
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Tertiary
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Men

Final Indicator Composition in the Database (Cont.)
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Women
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Men
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Women
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Secondary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Tertiary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Secondary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Tertiary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Secondary
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Tertiary
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (maths)
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (science)
OECD_Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Men
OECD_Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Women
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Young

Final Indicator Composition in the Database (Cont.)
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Middle Aged
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Old
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Primary
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Secondary
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Tertiary
OECD_Inequalities_Vertical inequality Worklife balance: Satisfaction with time use
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Men
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Women
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Middle Aged
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Old
OECD_Inequalities_Horizontal inequality Education Safety: Feeling Safe at night - Secondary
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Men
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Women
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Men
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Women

Final Indicator Composition in the Database (Cont.)
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Men
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Women
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Men
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Women
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Young
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Middle Aged
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Old
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Middle Aged
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Old
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Primary
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Secondary
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Tertiary
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Primary

Final Indicator Composition in the Database (Cont.)
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Secondary
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Tertiary
OECD_Inequalities_Vertical inequality Education Work & Job Quality: Earnings
WHO_DALYs All Ages
Statista_Anxiolytic drug consumption
Statista_Antidepressant consumption
WHO_Number of Mental Health Professionals
Statista_Inequalities in the work environment - Gender pay gap
OECD_Labour market insecurity
Eurofund_Paid Hours Worked
Eurofund_Paid & Unpaid Hours Worked
Eurofund_Engagement with Organization
Eurofund_Colleagues Trust
Eurofund_Hierarchy Trust
Eurostat_Work Related illness
Eurofund_Flexibility Time
Eurofund_Individual Value Perception of Work
Eurostat_Turnover_Average Integrated
Numbeo_Crime rate
Leeds-PB_CO_2 Emissions Variance to threshold
Leeds-PB_Phosphorus Variance to threshold
Leeds-PB_Nitrogen Variance to threshold
Leeds-PB_Blue Water Variance to threshold
Leeds-PB_eHANPP Variance to threshold
Leeds-PB_Ecological Footprint Variance to threshold

Final Indicator Composition in the Database (Cont.)
Leeds-PB_Material Footprint Variance to threshold
WHO_insufficient physical activity
Eurostat_energetic Poverty
European Social Survey_Trust in the Legal System
European Social Survey_Trust in the Police
European Social Survey_Trust in the Politicians
European Social Survey_Trust in the Political Parties
European Social Survey_Feel accomplishment from what I do

Thus, the proposed revamped well-being dashboard, considering dimensions and indicators, is as follows:

Table 41 –Proposed Dashboard

Dimension	**Indicators**	**Excluded Indicators**[45]
Income & Wealth	Household income	
	Household wealth	Household wealth
	Relative income poverty	
	Difficulty making ends meet	
	Financial Insecurity	Financial Insecurity
	Inequality Income – S80/S20 Vertical	

[45] The variables were excluded due to lack of data for our country sample.

(Cont.)

Dimension	Indicators	Excluded Indicators[46]
Work & Job Quality	Employment rate	
	Gender wage gap	
	Long-term unemployment rate	
	Labour market insecurity	
	Youth not in employment, education or training	
	Long hours in paid work	
	Earnings	
	Inequalities – Employment rate Men	
	Inequalities – Employment rate Women	
	Inequalities – Long-term unemployment rate Men	
	Inequalities – Long-term unemployment rate Women	
	Inequalities – Youth unemployed Men	

[46] The variables were excluded due to lack of data for our country sample.

(Cont.)

Dimension	Indicators	Excluded Indicators
Work & Job Quality (cont.)	Inequalities – Youth unemployed Women	
	Inequalities – Long hours in paid work Men	
	Inequalities – Long hours in paid work Women	
	Inequalities – Employment Rate Young	
	Inequalities – Employment Rate Middle Aged	
	Inequalities – Employment Rate Old	
	Inequalities – Long hours in paid work Young	Inequalities – Long hours in paid work Young
	Inequalities – Long hours in paid work Middle Aged	
	Inequalities – Long hours in paid work Old	
	Inequalities – Employment Rate Primary	
	Inequalities – Employment Rate Secondary	
	Inequalities – Employment Rate Tertiary	
	Inequalities – Long-term unemployment rate – Primary	
	Inequalities – Long-term unemployment rate – Secondary	
	Inequalities – Long-term unemployment rate – Tertiary	

(Cont.)

Dimension	Indicators	Excluded Indicators
Work & Job Quality (cont.)	Inequalities – Earnings (Vertical)	
Working Environment and Conditions	Paid hours	
	Working hours (including paid and not paid work)	
	Company engagement	
	Colleagues trust	
	Hierarchy trust	
	Turn-over	Turn-over
	Stress level	Stress level
	Flexibility of time	
	Individual value	
	Inequalities – gender pay gap	
Housing	Overcrowding rate	
	Housing affordability	
	Housing cost overburden	
	Poor households without access to basic sanitary facilities	
	Households with internet access at home	
	Energetic poverty	
Work-Life Balance	Time off	Time off
	Long unpaid hours	Long unpaid hours
	Gender gap in total hours worked	Gender gap in total hours worked
	Satisfaction with time use	
	Inequalities – Satisfaction with time use Men	

(Cont.)

Dimension	Indicators	Excluded Indicators
Work-Life Balance (cont.)	Inequalities – Satisfaction with time use Women	
	Inequalities – Satisfaction with time use Young	
	Inequalities – Satisfaction with time use Middle Aged	
	Inequalities – Satisfaction with time use Old	
	Inequalities – Satisfaction with time use Primary	
	Inequalities – Satisfaction with time use Secondary	
	Inequalities – Satisfaction with time use Tertiary	
	Inequalities – Satisfaction with time use (Vertical)	
Health	Life expectancy at birth	
	Perceived health	
	Deaths from suicide, alcohol and drugs	Deaths from suicide, alcohol and drugs
	Disability Adjusted Life years (DALY)	
	Inequalities – Perceived health Men	
	Inequalities – Perceived health Woman	
	Inequalities – Perceived health Young	
	Inequalities – Perceived health Middle Aged	Inequalities – Perceived health Middle Aged
	Inequalities – Perceived health Old	

(Cont.)

Dimension	Indicators	Excluded Indicators
Health (cont.)	Inequalities – Perceived health Primary	
	Inequalities – Perceived health Secondary	
	Inequalities – Perceived health Tertiary	
Mental Health	Hours of Sleep	Hours of Sleep
	National consumption of anxiolytics per year	
	National consumption of anti-depressants per year	
	Burn-out and stress related hospital occurrences (work related illnesses)	
	Number of Psychiatric and psychological medical consultations per year	Number of Psychiatric and psychological medical consultations per year
	Number of professionals (psychiatrists, psychotherapists, psychologists)	
Knowledge & Skills	Student skills (mean) - reading	
	Student skills (mean) - maths	
	Student skills (mean) - science	
	Adult Skills - numeracy	Adult Skills - numeracy
	Inequalities – Student Skills Reading Men	Inequalities – Student Skills Reading Men
	Inequalities – Student Skills Reading Women	Inequalities – Student Skills Reading Women
	Inequalities – Student Skills Math Men	

(Cont.)

Dimension	Indicators	Excluded Indicators
Knowledge & Skills (cont.)	Inequalities – Student Skills Math Women	
	Inequalities – Student Skills Science Men	
	Inequalities – Student Skills Science Women	
	Inequalities – Adult skills numeracy Men	Inequalities – Adult skills numeracy Men
	Inequalities – Adult skills numeracy Women	Inequalities – Adult skills numeracy Women
	Inequalities – Adult skills literacy Men	Inequalities – Adult skills literacy Men
	Inequalities – Adult skills literacy Women	Inequalities – Adult skills literacy Women
	Inequalities – Adult skills numeracy Young	Inequalities – Adult skills numeracy Young
	Inequalities – Adult skills numeracy Middle Aged	Inequalities – Adult skills numeracy Middle Aged
	Inequalities – Adult skills numeracy Old	Inequalities – Adult skills numeracy Old
	Inequalities – Adult skills literacy Young	Inequalities – Adult skills literacy Young
	Inequalities – Adult skills literacy Middle Aged	Inequalities – Adult skills literacy Middle Aged
	Inequalities – Adult skills literacy Old	Inequalities – Adult skills literacy Old
	Inequalities – Student Skills Reading Primary	Inequalities – Student Skills Reading Primary
	Inequalities – Student Skills Reading Secondary	

(Cont.)

Dimension	Indicators	Excluded Indicators
Knowledge & Skills (cont.)	Inequalities – Student Skills Reading Tertiary	
	Inequalities – Student Skills Math Primary	Inequalities – Student Skills Math Primary
	Inequalities – Student Skills Math Secondary	
	Inequalities – Student Skills Math Tertiary	
	Inequalities - Student skills Science Primary	Inequalities - Student skills Science Primary
	Inequalities - Student skills Science Secondary	
	Inequalities - Student skills Science Tertiary	
	Inequalities – Student skills reading Vertical	Inequalities – Student skills reading Vertical
	Inequalities – Student skills maths Vertical	
	Inequalities – Student skills science Vertical	
	Inequalities – Adult skills numeracy Vertical	Inequalities – Adult skills numeracy Vertical
	Inequalities – Adult skills literacy Vertical	Inequalities – Adult skills literacy Vertical
Social Connections	Social support	
	Time spent in social interactions	Time spent in social interactions
	Satisfaction with personal relationships	
	Inequalities – Social support Men	

(Cont.)

Dimension	Indicators	Excluded Indicators
Social Connections (cont.)	Inequalities – Social support Women	
	Inequalities – Time spent in social interactions Men	Inequalities – Time spent in social interactions Men
	Inequalities – Time spent in social interactions Women	Inequalities – Time spent in social interactions Women
	Inequalities – Satisfaction with personal relationships Men	
	Inequalities – Satisfaction with personal relationships Women	
	Inequalities – Social support Young	Inequalities – Social support Young
	Inequalities – Social support Middle Aged	
	Inequalities – Social support Old	
	Inequalities - Time Spent in Social Interactions Young	Inequalities - Time Spent in Social Interactions Young
	Inequalities - Time Spent in Social Interactions Middle Aged	Inequalities - Time Spent in Social Interactions Middle Aged
	Inequalities - Time Spent in Social Interactions Old	Inequalities - Time Spent in Social Interactions Old
	Inequalities – Satisfaction with personal relationships Young	
	Inequalities – Satisfaction with personal relationships Middle Aged	
	Inequalities – Satisfaction with personal relationships Old	
	Inequalities - Social Support Primary	Inequalities - Social Support Primary

(Cont.)

Dimension	Indicators	Excluded Indicators
Social Connections (cont.)	Inequalities - Social Support Secondary	
	Inequalities - Social Support Tertiary	Inequalities - Social Support Tertiary
	Inequalities – Satisfaction with personal relationships Primary	
	Inequalities – Satisfaction with personal relationships Secondary	
	Inequalities – Satisfaction with personal relationships Tertiary	
	Inequalities – Satisfaction with personal relationships Vertical	
Civic Engagement	Voter turnout	Voter turnout
	Trust in the legal system	
	Trust in the police	
	Trust in the politicians	
	Trust in the political parties	
	Corruption	
	Inequalities - Voter turnout Men	Inequalities - Voter turnout Men
	Inequalities - Voter turnout Women	Inequalities - Voter turnout Women
	Inequalities - Voter turnout Young	Inequalities - Voter turnout Young
	Inequalities - Voter turnout Middle Aged	Inequalities - Voter turnout Middle Aged
	Inequalities - Voter turnout Old	Inequalities - Voter turnout Old
	Inequalities - Voter turnout Primary	Inequalities - Voter turnout Primary

(Cont.)

Dimension	Indicators	Excluded Indicators
Civic Engagement (cont.)	Inequalities - Voter turnout Secondary	Inequalities - Voter turnout Secondary
	Inequalities - Voter turnout Tertiary	Inequalities - Voter turnout Tertiary
Environment	CO_2 Emissions (variance to threshold)	
	Phosphorus (variance to threshold)	
	Nitrogen (variance to threshold)	
	Blue Water (variance to threshold)	
	eHANPP (variance to threshold)	
	Ecological Footprint (variance to threshold)	
	Material Footprint (variance to threshold)	
Safety	Homicides	
	Feeling safety when walking alone at night	
	Road deaths	
	Crime rate	
	Inequalities - Homicides Men	Inequalities - Homicides Men
	Inequalities - Homicides Women	Inequalities - Homicides Women
	Inequalities – Feeling safe at night Men	
	Inequalities – Feeling safe at night Women	
	Inequalities – Feeling safe at night Young	Inequalities – Feeling safe at night Young
	Inequalities – Feeling safe at night Middle Aged	

(Cont.)

Dimension	Indicators	Excluded Indicators

Safety (cont.)	Inequalities – Feeling safe at night Old	
	Inequalities – Feeling safe at night Primary	Inequalities – Feeling safe at night Primary
	Inequalities – Feeling safe at night Secondary	
	Inequalities – Feeling safe at night Tertiary	Inequalities – Feeling safe at night Tertiary
Subjective Well-Being	Life Satisfaction	
	Negative Affect Balance	
	Physical activity	
	Accomplishment	
	Inequalities - Life Satisfaction Men	
	Inequalities - Life Satisfaction Women	
	Inequalities – Negative Affect balance Men	
	Inequalities – Negative Affect balance Women	
	Inequalities - Life Satisfaction Young	
	Inequalities - Life Satisfaction Middle Aged	
	Inequalities - Life Satisfaction Old	
	Inequalities – Negative Affect balance Young	
	Inequalities – Negative Affect balance Middle Aged	
	Inequalities – Negative Affect balance Old	
	Inequalities - Life Satisfaction Primary	

(Cont.)

Dimension	Indicators	Excluded Indicators
Subjective Well-Being (cont.)	Inequalities - Life Satisfaction Secondary	
	Inequalities - Life Satisfaction Tertiary	
	Inequalities – Negative Affect balance Primary	
	Inequalities – Negative Affect balance Secondary	
	Inequalities – Negative Affect balance Tertiary	
	Inequalities – Life Satisfaction Vertical	

And in terms of countries:

Table 42 – Countries Final Composition in the DB

Final Country Sample in the Database
Belgium
Denmark
Estonia
Finland
France
Germany
Hungary
Lithuania
Poland
Portugal
Slovak Republic
Slovenia

Final Country Sample in the Database (Cont.)
Spain
Sweden
Switzerland

5. Statistical Descriptive Analysis

In the tables below, N stands for the size of the sample, the standard deviation values represent the absolute dispersion, and Minimum and Maximum values represent the relative dispersion for the variation coefficient.

Table 43 – Descriptive Analysis of the Well-Being Indicators Full Dataset

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Household income	15	18195.00	34562.00	25643.3333	5449.17435
OECD_Relative Income Poverty	15	6.40	16.30	9.9267	3.08371
OECD_Difficulty Making Ends Meet	15	5.90	34.70	18.1067	8.84037
OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	15	3.50	6.60	4.4600	.92798
OECD_Employment rate	15	62.29	84.69	76.4213	5.56069

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Gender wage gap	15	3.40	20.30	11.0333	5.43437
OECD_Long-term unemployment rate	15	.73	13.68	3.1307	3.30177
OECD_Labour market insecurity	15	1.66	14.62	7.5047	4.35008
OECD_Youth not in employment, education or training	15	5.79	15.32	9.9713	2.80899
OECD_Long hours in paid work	15	.97	7.70	4.1547	1.95721
OECD_Earnings	15	22692.00	302212.00	58647.40	68678.64
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Men	15	73.60	90.04	81.1913	4.18166
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Women	15	51.23	82.31	71.6693	7.51880
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Men	15	.62	10.53	2.9553	2.53257
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Women	15	.75	17.64	3.3627	4.32189
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Men	15	4.11	16.35	9.9640	3.28514
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Women	15	5.72	15.38	9.9880	2.61868

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Men	15	1.45	10.40	5.9753	2.65977
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Women	15	.39	5.01	2.2307	1.34582
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Young	15	13.99	53.71	34.0493	10.88575
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Middle Aged	15	68.93	87.51	81.9300	4.80754
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Old	15	41.07	78.15	59.2760	10.72390
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Middle Aged	15	.96	8.03	4.3680	2.02461
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Old	15	.13	12.56	4.5493	3.46335
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Primary	15	38.26	70.05	55.5727	9.05884
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Secondary	15	60.87	86.61	76.6300	6.48706

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Terciary	15	74.15	89.83	85.9393	4.05727
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Primary	15	24.34	73.76	47.9220	15.90432
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Secondary	15	21.35	72.84	41.9467	15.03152
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Tertiary	15	14.75	69.49	34.0073	14.25351
OECD_Inequalities_Vertical inequality Education Work & Job Quality: Earnings	15	2.10	4.10	3.1200	.60261
Eurofund_Paid Hours Worked	15	32.50	64.70	53.7200	7.99135
Eurofund_Paid & Unpaid Hours Worked	15	78.50	90.40	83.5400	3.64766
Eurofund_Engagement with Organization	15	63.20	72.90	68.0400	2.57760
Eurofund_Colleagues Trust	15	53.90	88.00	75.3133	9.05601
Eurofund_Hierarchy Trust	15	47.00	79.90	64.3800	9.02569
Eurofund_Flexibility Time	15	17.50	57.60	33.9333	11.79611
Eurofund_Individual Value Perception of Work	15	42.10	80.90	64.9133	9.99027
Statista_Inequalities in the work environment - Gender pay gap	15	3.10	22.30	12.9133	5.62112
OECD_Overcrowding rate	15	2.67	34.21	13.0987	9.78177
OECD_Housing affordability	15	72.87	83.12	78.7493	2.65987

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Housing cost overburden	15	4.85	31.21	15.8593	7.39154
OECD_Poor households without access to basic sanitary facilities	15	.00	21.88	4.7380	6.40371
OECD_Households with internet access at home	15	76.13	94.09	84.7880	5.99661
Eurostat_energetic Poverty	15	.80	17.50	5.8000	5.28340
OECD_Satisfaction with time use_mean	15	5.55	7.78	6.9580	.53479
OECD_Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Men	15	6.00	8.00	7.0000	.53452
OECD_Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Women	15	5.00	8.00	7.0000	.75593
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Young	15	6.00	8.00	7.0000	.37796
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Middle Aged	15	5.00	7.00	6.2667	.59362
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Old	15	5.00	8.00	7.2000	.77460
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Primary	15	5.00	8.00	7.0667	.79881

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Secondary	15	6.00	8.00	7.0667	.59362
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Tertiary	15	6.00	8.00	6.9333	.45774
OECD_Inequalities_Vertical inequality Worklife balance: Satisfaction with time use	15	2.00	5.00	2.8667	.83381
OECD_Life Expectancy at Birth	15	71.40	83.80	79.97	3.50
OECD_Perceived health_mean	15	44.00	80.70	64.72	10.17
WHO_DALYs All Ages	15	604.60	16692.90	4366.7200	5006.98945
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Men	15	52.00	78.80	68.6933	9.36418
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Women	15	42.90	74.30	63.0000	10.43216
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Young	15	80.90	97.70	89.2267	5.41736
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Old	15	11.30	65.40	37.5667	17.85536
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Primary	15	34.90	68.70	51.7733	11.45086
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Secondary	15	41.60	85.30	67.3467	11.80568

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Tertiary	15	61.60	89.00	78.7267	7.89814
Statista_Anxiolytic drug consumption	15	3.20	84.80	25.0933	21.33162
Statista_Antidepressant consumption	15	30.40	131.10	66.9400	28.19685
Eurostat_Work Related illness	15	29.30	60.70	44.7467	10.07386
WHO_Number of Mental Health Professionals	15	5.80	48.04	18.7047	9.98764
OECD_Student skills (reading)_mean	15	457.41	523.02	495.4840	19.49791
OECD_Student skills (maths)_mean	15	451.37	523.41	498.5667	17.00889
OECD_Student skills (science)_mean	15	451.63	530.11	494.5953	19.76680
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Men	15	451.53	527.64	500.2000	17.33100
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Women	15	451.21	519.19	496.9307	17.12136
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Men	15	446.07	527.63	492.1280	19.68168
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Women	15	457.36	534.04	497.1147	20.57719
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Secondary	15	442.15	506.66	478.9140	17.84998

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Tertiary	15	475.23	547.92	516.0127	18.22240
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Secondary	15	434.82	504.19	476.6487	16.12128
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Tertiary	15	469.10	546.42	514.3980	18.44873
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Secondary	15	432.10	520.66	478.0233	20.31903
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Tertiary	15	473.23	548.09	517.4860	21.18386
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (maths)	15	1.50	1.70	1.6067	.07988
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (science)	15	1.50	1.70	1.6467	.06399
OECD_Social support_mean	15	78.95	96.57	90.7260	4.65207
OECD_Satisfaction with personal relationships_mean	15	7.08	8.56	8.1327	.38360
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Men	15	80.12	95.29	90.0827	4.02794

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Women	15	81.23	95.60	90.8093	3.87716
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Men	15	7.07	8.48	8.0633	.36891
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Women	15	7.09	8.67	8.1947	.40495
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Middle Aged	15	82.40	96.04	91.0180	3.77003
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Old	15	74.15	93.70	87.5533	5.12430
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Young	15	7.40	8.88	8.3147	.36483
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Middle Aged	15	7.05	8.47	8.0513	.33884
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Old	15	7.01	8.78	8.1327	.46383

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Inequalities_Horizontal inequality Education Social Connections: Social Support - Secondary	15	83.08	95.71	91.1780	3.51696
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Primary	15	6.96	8.72	8.0127	.45336
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Secondary	15	7.08	8.66	8.1447	.41153
OECD_Inequalities_Vertical inequality Social Connections: Satisfaction with personal relationships	15	1.50	2.20	1.8133	.19223
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Tertiary	15	7.24	8.64	8.2280	.33238
OECD_Corruption	15	45.00	88.00	67.7333	13.63015
European Social Survey_Trust in the Legal System	15	3.92	7.68	5.4907	1.18126
European Social Survey_Trust in the Police	15	5.16	8.12	6.6920	.78547
European Social Survey_Trust in the Polititians	15	2.55	5.37	3.8320	.93810
European Social Survey_Trust in the Polititcal Parties	15	2.50	5.30	3.7913	.97926
Leeds-PB_CO2 Emissions Variance to threshold	15	-15.60	-5.10	-9.5533	2.81853
Leeds-PB_Phosphorus Variance to threshold	15	-6.60	-2.70	-4.3467	1.27103

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
Leeds-PB_Nitrogen Variance to threshold	15	-99.10	-36.40	-63.8267	19.99341
Leeds-PB_Blue Water Variance to threshold	15	-401.00	412.00	187.0000	267.43384
Leeds-PB_eHANPP Variance to threshold	15	-2.90	.20	-.9200	.99800
Leeds-PB_Ecological Footprint Variance to threshold	15	-4.80	-1.60	-2.8800	.92982
Leeds-PB_Material Footprint Variance to threshold	15	-31.80	-9.10	-18.9467	6.42182
OECD_Homicides	15	.48	3.70	1.1213	.84001
OECD_Feeling safe at night_mean	15	57.49	93.01	76.0547	11.05678
OECD_Road deaths	15	2.04	8.10	4.9833	1.73241
Numbeo_Crime rate	15	21.79	49.20	33.4307	8.92218
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Men	15	67.51	96.23	81.6767	9.29019
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Women	15	47.24	84.03	63.7120	10.84059
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Middle Aged	15	61.10	92.49	76.7213	10.10608
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Old	15	51.72	88.95	67.4120	11.23319
OECD_Inequalities_Horizontal inequality Education Safety: Feeling Safe at night - Secondary	15	58.87	90.03	73.0173	10.33513
OECD_Life satisfaction_mean	15	6.44	8.12	7.3547	.49595
OECD_Negative affect balance	15	7.92	25.10	14.1067	4.93738
WHO_insufficient physical activity	15	16.56	43.40	31.0013	6.21171

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
European Social Survey_Feel accomplishment from what I do	15	1.92	2.44	2.2087	.17427
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Men	15	6.50	8.10	7.3733	.49203
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Women	15	6.40	8.20	7.3400	.51658
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Men	15	6.79	19.54	12.1720	3.63201
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Women	15	9.08	24.52	15.5027	4.92994
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Young	15	6.96	8.20	7.7833	.31414
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Middle Aged	15	6.57	8.11	7.4907	.38659
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Old	15	6.20	8.12	7.1233	.66770
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Young	15	6.70	13.80	8.8853	1.81583
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Middle Aged	15	10.11	20.39	13.9653	3.14528

Descriptive Statistics (cont.)

	N	Minimum	Maximum	Mean	Std. Deviation
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Old	15	6.63	28.58	16.5413	6.98467
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Primary	15	6.10	8.00	6.9933	.64083
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Secondary	15	6.50	8.10	7.3533	.49838
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Terciary	15	6.90	8.30	7.7733	.34737
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Primary	15	7.26	32.17	17.7407	7.37839
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Secondary	15	8.65	18.76	13.3340	3.24946
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Terciary	15	7.20	15.69	10.6627	2.44334
OECD_Inequalities_Vertical inequality Subjective Well-being: Life Satisfaction	15	1.50	2.90	2.1733	.37123
Valid N (listwise)	0				

6. Indicator Standardization

The tool we've used for the data analysis section, SPSS, already automatically standardizes indicators whenever that is required for the statistical operation required, such as for the Principal Component Analysis (PCA). However, we have standardized the indicators in our DB and the comparison between the original values per country and the standardized indicators can be found in the table below:

Table 44 –Indicators Standardization Full Dataset

	HouseholdIncome		RelativeIncomePoverty		DifficultyEndsMeet		Ineq_Income_S80S20_Vertical		EmploymentRate		GengerWageGap		LongTermUnemployment		LabourInsecurity		YouthUnemployed		LongHoursWork	
Country	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	31598.00	1.0928	8.20	-0.5599	19.10	0.1124	3.80	-0.71122	72.98	-0.6189	3.40	-1.4046	2.92	-0.0638	2.96	-1.0447	9.43	-0.1927	4.56	0.2071
Denmark	23619.00	-0.3715	6.40	-1.1436	9.30	-0.9962	3.50	-1.03451	82.51	1.0949	15.10	0.7483	0.73	-0.7271	5.21	-0.5275	5.79	-1.4886	5.62	0.7487
Estonia	30423.00	0.8771	16.30	2.0668	13.90	-0.4758	3.80	-0.71122	79.11	0.4835	4.90	-1.1286	1.02	-0.6393	5.19	-0.5321	9.06	-0.3244	1.86	-1.1724
Finland	20968.00	-0.8580	6.50	-1.1112	6.10	-1.3582	5.20	0.79743	80.43	0.7209	17.30	1.1532	1.35	-0.5393	13.82	1.4518	10.67	0.2487	2.70	-0.7432
France	30227.00	0.8412	8.50	-0.4626	18.30	0.0219	3.90	-0.60346	78.05	0.2929	18.90	1.4476	1.70	-0.4333	2.89	-1.0608	9.67	-0.1073	3.90	-0.1301
Germany	31403.00	1.0570	9.80	-0.0411	5.90	-1.3808	4.60	0.15087	73.47	-0.5307	11.80	0.1411	3.70	0.1724	3.20	-0.9896	13.18	1.1423	7.70	1.8114
Hungary	18423.00	-1.3250	8.70	-0.3978	34.70	1.8770	5.00	0.58191	62.29	-2.5413	5.90	-0.9446	13.68	3.1951	10.67	0.7276	15.14	1.8400	5.73	0.8049
Lithuania	18195.00	-1.3669	15.50	1.8073	23.40	0.5988	6.60	2.30609	78.23	0.3253	20.30	1.7052	3.17	0.0119	14.62	1.6357	8.51	-0.5202	1.72	-1.2439
Poland	34562.00	1.6367	9.80	-0.0411	18.60	0.0558	4.00	-0.49570	80.81	0.7892	5.10	-1.0918	1.06	-0.6271	1.66	-1.3436	6.51	-1.2322	2.87	-0.6564
Portugal	21492.00	-0.7618	10.40	0.1535	29.20	1.2548	4.30	-0.17242	73.97	-0.4408	11.50	0.0859	1.05	-0.6302	10.02	0.5782	9.37	-0.2141	5.59	0.7334
Slovak Republic	22405.00	-0.5943	7.70	-0.7221	25.40	0.8250	5.10	0.68967	78.03	0.2893	11.70	0.1227	3.17	0.0119	7.15	-0.0815	10.26	0.1028	7.13	1.5202
Slovenia	21859.00	-0.6945	7.50	-0.7869	20.50	0.2707	3.50	-1.03451	75.04	-0.2484	15.70	0.8587	3.84	0.2148	13.39	1.3529	11.00	0.3662	3.97	-0.0944
Spain	22658.00	-0.5479	14.20	1.3858	27.10	1.0173	3.60	-0.92675	77.19	0.1382	8.20	-0.5214	2.23	-0.2728	5.82	-0.3873	7.17	-0.9973	4.23	0.0385
Sweden	24955.00	-0.1263	8.90	-0.3329	8.00	-1.1432	5.90	1.55176	69.52	-1.2411	8.60	-0.4478	6.41	0.9932	10.70	0.7345	15.32	1.9041	3.77	-0.1965
Switzerland	31863.00	1.1414	10.50	0.1859	12.10	-0.6795	4.10	-0.38794	84.69	1.4870	7.10	-0.7238	0.93	-0.6665	5.27	-0.5137	8.49	-0.5274	0.97	-1.6271

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	Earnings		Ineq_WorkJob_EmploymentMen		Ineq_WorkJob_EmploymentWomen		Ineq_WorkJob_LTUnemploymentMen		Ineq_WorkJob_LTUnemploymentWomen		Ineq_WorkJob_YouthUnemploymentMen		Ineq_WorkJob_YouthUnemploymentWomen		Ineq_WorkJob_LongHoursMen		Ineq_WorkJob_LongHoursWomen		Ineq_WorkJob_EmploymentYoung	
Country	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	55388	-0.04746	77.36	-0.9162	68.59	-0.4096	3.23	0.1085	2.57	-0.1834	10.43	0.1419	8.39	-0.6102	6.44	0.1747	2.56	0.2447	24.96	-0.8350
Denmark	57794	-0.01243	90.04	2.1161	74.72	0.4057	0.62	-0.9221	0.86	-0.5791	4.11	-1.7820	7.56	-0.9272	8.65	1.0056	2.16	-0.0525	28.36	-0.5226
Estonia	27920	-0.44741	83.06	0.4469	75.10	0.4563	0.97	-0.7839	1.08	-0.5282	8.93	-0.3148	9.20	-0.3009	3.26	-1.0209	0.39	-1.3677	53.71	1.8061
Finland	45771	-0.18749	84.15	0.7075	76.76	0.6771	1.46	-0.5904	1.23	-0.4935	11.71	0.5315	9.57	-0.1596	3.84	-0.8028	1.60	-0.4686	42.47	0.7735
France	46867	-0.17153	79.98	-0.2897	76.06	0.5840	1.93	-0.4049	1.46	-0.4402	10.03	0.0201	9.30	-0.2627	5.83	-0.0546	2.00	-0.1714	45.64	1.0648
Germany	53221	-0.07901	77.55	-0.8708	69.61	-0.2739	3.84	0.3493	3.54	0.0410	14.00	1.2286	12.34	0.8982	10.40	1.6636	5.01	2.0652	29.85	-0.3858
Hungary	23721	-0.50855	73.60	-1.8154	51.23	-2.7184	10.53	2.9909	17.64	3.3035	14.91	1.5056	15.38	2.0590	7.31	0.5018	3.78	1.1512	13.99	-1.8427
Lithuania	27572	-0.45248	80.32	-0.2084	76.29	0.6145	3.86	0.3572	2.46	-0.2089	8.36	-0.4883	8.67	-0.5033	2.50	-1.3066	1.00	-0.9144	33.11	-0.0863
Poland	302212	3.54644	83.58	0.5712	77.92	0.8313	1.21	-0.6892	0.88	-0.5744	7.25	-0.8261	5.72	-1.6298	4.40	-0.5923	1.22	-0.7510	49.08	1.3808
Portugal	27263	-0.45697	81.32	0.0308	66.71	-0.6596	1.06	-0.7484	1.04	-0.5374	7.91	-0.6252	10.91	0.3521	8.71	1.0282	2.12	-0.0822	30.96	-0.2838
Slovak Republic	22692	-0.52353	81.81	0.1479	74.57	0.3858	3.14	0.0729	3.20	-0.0376	11.16	0.3641	9.33	-0.2513	9.89	1.4718	4.61	1.7679	27.24	-0.6255
Slovenia	39377	-0.28059	81.41	0.0523	68.61	-0.4069	3.85	0.3533	3.82	0.1058	9.53	-0.1321	12.55	0.9784	5.62	-0.1336	2.14	-0.0674	27.46	-0.6053
Spain	39033	-0.2856	80.67	-0.1247	73.51	0.2448	2.07	-0.3496	2.42	-0.2181	6.41	-1.0818	8.02	-0.7515	5.98	0.0018	2.31	0.0589	35.16	0.1020
Sweden	45917	-0.18536	76.04	-1.2319	63.05	-1.1464	5.47	0.9929	7.49	0.9550	16.35	1.9439	14.25	1.6275	5.35	-0.2351	2.07	-0.1194	24.26	-0.8993
Switzerland	64963	0.09196	86.98	1.3843	82.31	1.4152	1.09	-0.7365	0.75	-0.6045	8.37	-0.4852	8.63	-0.5186	1.45	-1.7014	0.49	-1.2934	44.49	0.9591

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Country	Ineq_WorkJob_EmploymentMiddle		Ineq_WorkJob_EmploymentOld		Ineq_WorkJob_LongHoursMiddle		Ineq_WorkJob_LongHoursOld		Ineq_WorkJob_EmploymentPrimary		Ineq_WorkJob_EmploymentSecondary		Ineq_WorkJob_EmploymentTertiary		Ineq_WorkJob_LTUnemploymentPrimary		Ineq_WorkJob_LTUnemploymentSecondary		Ineq_WorkJob_LTUnemploymentTertiary	
	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	80.40	-0.3183	50.32	-0.8351	4.65	0.1393	10.20	1.6316	46.48	-1.0037	55.15	-0.3854	43.26	0.0396	63.68	0.9908	55.15	0.8784	43.26	0.6492
Denmark	87.47	1.1524	65.15	0.5477	6.05	0.8308	2.85	-0.4907	52.23	-0.3690	23.48	1.0606	14.75	0.3255	28.77	-1.2042	23.48	-1.2285	14.75	-1.3511
Estonia	82.25	0.0666	69.16	0.9217	2.29	-1.0264	2.04	-0.7245	61.09	0.6091	28.57	0.7600	30.03	0.1653	36.00	-0.7496	28.57	-0.8899	30.03	-0.2790
Finland	84.17	0.4659	68.67	0.8760	3.16	-0.5967	1.05	-1.0104	65.05	1.0462	33.25	0.5072	19.40	-0.2143	24.34	-1.4827	33.25	-0.5786	19.40	-1.0248
France	82.47	0.1123	65.42	0.5729	4.06	-0.1521	3.98	-0.1644	54.64	-0.1030	28.79	-0.1464	26.32	0.1899	41.18	-0.4239	28.79	-0.8753	26.32	-0.5393
Germany	80.56	-0.2850	52.16	-0.6636	8.03	1.8087	7.30	0.7942	52.94	-0.2906	46.10	-0.4840	37.28	-0.2537	55.56	0.4802	46.10	0.2763	37.28	0.2296
Hungary	68.93	-2.7041	41.07	-1.6977	5.61	0.6135	12.56	2.3130	50.37	-0.5743	72.84	-2.4295	69.49	-2.9057	73.76	1.6246	72.84	2.0552	69.49	2.4894
Lithuania	82.67	0.1539	65.41	0.5720	1.77	-1.2832	0.13	-1.2760	61.98	0.7073	44.67	-0.2312	32.72	0.7716	53.21	0.3325	44.67	0.1812	32.72	-0.0903
Poland	83.33	0.2912	72.04	1.1902	3.14	-0.6065	2.40	-0.6206	61.46	0.6499	34.29	0.6382	27.72	0.7667	36.51	-0.7175	34.29	-0.5094	27.72	-0.4411
Portugal	82.37	0.0915	48.94	-0.9638	5.81	0.7122	4.49	-0.0171	43.07	-1.3802	31.42	-0.9635	20.00	0.7001	36.23	-0.7351	31.42	-0.7003	20.00	-0.9827
Slovak Republic	84.34	0.5013	59.23	-0.0043	7.73	1.6606	6.52	0.5690	70.05	1.5981	50.11	1.0914	48.71	0.6065	64.05	1.0141	50.11	0.5431	48.71	1.0315
Slovenia	81.25	-0.1414	54.22	-0.4715	3.97	-0.1966	5.68	0.3265	38.26	-1.9111	64.14	0.0385	41.40	-0.8132	72.49	1.5447	64.14	1.4765	41.40	0.5187
Spain	87.51	1.1607	47.04	-1.1410	4.41	0.0207	4.23	-0.0922	51.29	-0.4728	51.14	-0.1156	40.59	0.7248	53.78	0.3683	51.14	0.6116	40.59	0.4618
Sweden	74.67	-1.5101	52.16	-0.6636	3.88	-0.2410	3.80	-0.2164	57.41	0.2028	43.90	-0.8787	40.00	-1.0621	47.58	-0.0215	43.90	0.1299	40.00	0.4204
Switzerland	86.56	0.9631	78.15	1.7600	0.96	-1.6833	1.01	-1.0219	67.27	1.2913	21.35	1.5384	18.44	0.9589	31.69	-1.0206	21.35	-1.3702	18.44	-1.0922

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Country	Ineq_WorkJob_EmploymentMiddle		Ineq_WorkJob_Earnings_Vertical		PaidWorkedHours		PaidUnpaidWorkedHours		EngagementOrg		ColleaguesTrust		HierarchyTrust		FlexibilityTime		ValueofWork		Ineq_GenderPayGap	
	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	80.40	-0.3183	2.40	-1.1948	49.60	-0.5156	83.00	-0.1480	70.70	1.0320	76.80	0.1642	64.80	0.0465	31.20	-0.2317	72.10	0.7194	5.30	-1.3544
Denmark	87.47	1.1524	3.30	0.2987	46.70	-0.8784	87.20	1.0034	68.20	0.0621	67.60	-0.8517	61.70	-0.2969	57.60	2.0063	66.30	0.1388	16.40	0.6203
Estonia	82.25	0.0666	2.60	-0.8629	52.80	-0.1151	83.50	-0.0110	72.90	1.8855	84.20	0.9813	70.30	0.6559	23.80	-0.8590	75.70	1.0797	13.90	0.1755
Finland	84.17	0.4659	4.00	1.4603	64.70	1.3740	87.60	1.1130	67.10	-0.3647	76.30	0.1090	59.30	-0.5628	29.90	-0.3419	63.60	-0.1315	21.10	1.4564
France	82.47	0.1123	2.60	-0.8629	63.00	1.1613	85.20	0.4551	69.40	0.5276	83.10	0.8598	71.10	0.7445	20.00	-1.1812	77.70	1.2799	16.70	0.6737
Germany	80.56	-0.2850	2.90	-0.3651	56.30	0.3228	79.10	-1.2172	67.30	-0.2871	70.50	-0.5315	58.40	-0.6626	36.90	0.2515	69.40	0.4491	15.80	0.5135
Hungary	68.93	-2.7041	3.50	0.6306	32.50	-2.6554	78.50	-1.3817	66.10	-0.7526	82.20	0.7605	79.90	1.7195	48.50	1.2349	62.70	-0.2215	13.40	0.0866
Lithuania	82.67	0.1539	4.10	1.6263	60.20	0.8109	85.40	0.5099	67.90	-0.0543	68.10	-0.7965	61.30	-0.3412	27.60	-0.5369	59.20	-0.5719	22.30	1.6699
Poland	83.33	0.2912	2.40	-1.1948	52.70	-0.1276	80.90	-0.7238	72.00	1.5363	88.00	1.4009	75.30	1.2099	17.50	-1.3931	80.90	1.6002	13.40	0.0866
Portugal	82.37	0.0915	3.70	0.9625	47.00	-0.8409	80.80	-0.7512	63.20	-1.8777	53.90	-2.3645	47.00	-1.9256	34.70	0.0650	56.20	-0.8722	4.50	-1.4967
Slovak Republic	84.34	0.5013	3.40	0.4646	59.40	0.7108	79.30	-1.1624	65.50	-0.9854	77.80	0.2746	71.20	0.7556	35.60	0.1413	62.60	-0.2316	11.40	-0.2692
Slovenia	81.25	-0.1414	3.40	0.4646	56.70	0.3729	90.40	1.8807	65.60	-0.9466	66.00	-1.0284	56.20	-0.9063	52.40	1.5655	42.10	-2.2836	15.80	0.5135
Spain	87.51	1.1607	3.20	0.1328	57.80	0.5106	87.00	0.9486	68.80	0.2948	80.50	0.5727	68.40	0.4454	39.60	0.4804	53.00	-1.1925	3.10	-1.7458
Sweden	74.67	-1.5101	3.20	0.1328	50.30	-0.4280	80.20	-0.9157	66.70	-0.5199	83.50	0.9040	69.30	0.5451	32.30	-0.1385	65.00	0.0087	9.40	-0.6250
Switzerland	86.56	0.9631	2.10	-1.6926	56.10	0.2978	85.00	0.4003	69.20	0.4500	71.20	-0.4542	51.50	-1.4270	21.40	-1.0625	67.20	0.2289	11.20	-0.3048

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	Overcrowding		HousingAffordability		HousingOverburden		HouseholdsNoSantitary		HouseholdsWithInternet		EnergeticPoverty		SatisfactionTimeUse		Ineq_WLB_SatisfactionTimeMen		Ineq_WLB_SatisfactionTimeWomen		Ineq_WLB_SatisfactionTimeYoung	
Country	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	4.55	-0.8739	79.78	0.3875	17.34	0.2003	2.59	-0.3354	83.73	-0.1764	4.10	-0.3218	7.01	0.0972	7.00	0.0000	7.00	0.0000	7.00	0.0000
Denmark	12.24	-0.0878	76.05	-1.0148	4.85	-1.4894	1.51	-0.5041	85.77	0.1638	2.20	-0.6814	6.87	-0.1645	7.00	0.0000	7.00	0.0000	7.00	0.0000
Estonia	8.78	-0.4415	76.31	-0.9171	23.63	1.0513	1.91	-0.4416	90.30	0.9192	3.00	-0.5300	7.53	1.0696	8.00	1.8708	8.00	1.3229	7.00	0.0000
Finland	8.01	-0.5202	83.12	1.6432	12.39	-0.4694	13.57	1.3792	89.29	0.7508	2.70	-0.5867	6.95	-0.0150	7.00	0.0000	7.00	0.0000	7.00	0.0000
France	8.85	-0.4343	76.84	-0.7178	20.56	0.6360	1.85	-0.4510	93.00	1.3694	1.80	-0.7571	7.78	1.5370	8.00	1.8708	8.00	1.3229	8.00	2.6458
Germany	6.38	-0.6869	79.25	0.1882	9.69	-0.8346	1.42	-0.5181	81.31	-0.5800	6.50	0.1325	6.92	-0.0711	7.00	0.0000	7.00	0.0000	7.00	0.0000
Hungary	17.97	0.4980	77.42	-0.4998	31.21	2.0768	0.67	-0.6353	76.13	-1.4438	17.10	2.1388	5.55	-2.6328	6.00	-1.8708	5.00	-2.6458	6.00	-2.6458
Lithuania	34.21	2.1582	79.44	0.2597	7.20	-1.1715	21.88	2.6769	78.79	-1.0002	6.00	0.0379	7.00	0.0785	7.00	0.0000	7.00	0.0000	7.00	0.0000
Poland	7.37	-0.5856	82.09	1.2559	17.58	0.2328	0.00	-0.7399	94.09	1.5512	0.80	-0.9464	7.52	1.0509	7.00	0.0000	8.00	1.3229	7.00	0.0000
Portugal	30.65	1.7943	78.13	-0.2328	15.66	-0.0270	10.21	0.8545	79.33	-0.9102	3.20	-0.4921	6.87	-0.1645	7.00	0.0000	7.00	0.0000	7.00	0.0000
Slovak Republic	5.14	-0.8136	80.51	0.6619	13.45	-0.3260	3.54	-0.1871	76.93	-1.3104	17.50	2.2145	6.38	-1.0808	6.00	-1.8708	6.00	-1.3229	7.00	0.0000
Slovenia	25.75	1.2934	72.87	-2.2104	8.51	-0.9943	10.56	0.9092	78.99	-0.9669	5.70	-0.0189	6.60	-0.6694	7.00	0.0000	7.00	0.0000	7.00	0.0000
Spain	9.41	-0.3771	81.65	1.0905	10.05	-0.7859	1.01	-0.5822	86.68	0.3155	2.80	-0.5678	7.19	0.4338	7.00	0.0000	7.00	0.0000	7.00	0.0000
Sweden	2.67	-1.0661	77.93	-0.3080	24.11	1.1162	0.35	-0.6852	86.12	0.2221	10.90	0.9653	6.85	-0.2019	7.00	0.0000	7.00	0.0000	7.00	0.0000
Switzerland	14.50	0.1433	79.85	0.4138	21.66	0.7848	0.00	-0.7399	91.36	1.0960	2.70	-0.5867	7.35	0.7330	7.00	0.0000	7.00	0.0000	7.00	0.0000

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Country	Ineq_WLB_Satisfaction TimeMiddle		Ineq_WLB_Satisfaction TimeOld		Ineq_WLB_Satisfaction TimePrimary		Ineq_WLB_Satisfaction TimeSecondary		Ineq_WLB_Satisfaction TimeTertiary		Ineq_WLB_Satisfaction Time_Vertical		LifeExpectancy		PerceivedHealth		DALYs		Ineq_Health_Perceived HealthMen	
	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	6.00	-0.4492	7.00	-0.2582	7.00	-0.0835	7.00	-0.1123	7.00	0.1456	2.00	-1.0394	81.7	0.49303	74.9	1.00037	3228.80	-0.2273	77.30	0.9191
Denmark	6.00	-0.4492	7.00	-0.2582	7.00	-0.0835	7.00	-0.1123	7.00	0.1456	3.00	0.1599	81	0.29315	71.1	0.62695	3434.30	-0.1862	64.00	-0.5012
Estonia	7.00	1.2354	8.00	1.0328	8.00	1.1684	8.00	1.5723	7.00	0.1456	2.00	-1.0394	71.4	-2.44803	51.6	-1.28928	1693.00	-0.5340	74.40	0.6094
Finland	6.00	-0.4492	7.00	-0.2582	7.00	-0.0835	7.00	-0.1123	7.00	0.1456	3.00	0.1599	81.8	0.52159	68.8	0.40093	604.60	-0.7514	54.20	-1.5477
France	7.00	1.2354	8.00	1.0328	8.00	1.1684	8.00	1.5723	8.00	2.3303	2.00	-1.0394	82.8	0.80713	67.5	0.27319	1589.70	-0.5546	70.50	0.1929
Germany	6.00	-0.4492	7.00	-0.2582	7.00	-0.0835	7.00	-0.1123	7.00	0.1456	3.00	0.1599	81	0.29315	65.5	0.07665	16692.90	2.4618	69.70	0.1075
Hungary	5.00	-2.1338	5.00	-2.8402	5.00	-2.5872	6.00	-1.7969	6.00	-2.0390	5.00	2.5585	76.2	-1.07744	60.6	-0.40486	3238.60	-0.2253	78.40	1.0366
Lithuania	7.00	1.2354	7.00	-0.2582	7.00	-0.0835	7.00	-0.1123	7.00	0.1456	2.00	-1.0394	75.8	-1.19165	44	-2.03611	1070.50	-0.6583	52.00	-1.7827
Poland	7.00	1.2354	8.00	1.0328	8.00	1.1684	8.00	1.5723	7.00	0.1456	2.00	-1.0394	77.7	-0.64913	59.1	-0.55227	1311.10	-0.6103	78.80	1.0793
Portugal	6.00	-0.4492	7.00	-0.2582	7.00	-0.0835	7.00	-0.1123	7.00	0.1456	3.00	0.1599	81.4	0.40737	49.3	-1.51529	12643.90	1.6531	61.80	-0.7361
Slovak Republic	6.00	-0.4492	7.00	-0.2582	6.00	-1.3353	6.00	-1.7969	6.00	-2.0390	4.00	1.3592	77.4	-0.73479	66.6	0.18474	3398.70	-0.1933	54.50	-1.5157
Slovenia	6.00	-0.4492	7.00	-0.2582	7.00	-0.0835	7.00	-0.1123	7.00	0.1456	3.00	0.1599	81.5	0.43592	65.4	0.06682	1755.70	-0.5215	70.60	0.2036
Spain	7.00	1.2354	8.00	1.0328	7.00	-0.0835	7.00	-0.1123	7.00	0.1456	3.00	0.1599	83.5	1.007	73.6	0.87262	635.90	-0.7451	69.20	0.0541
Sweden	6.00	-0.4492	7.00	-0.2582	7.00	-0.0835	7.00	-0.1123	7.00	0.1456	3.00	0.1599	82.6	0.75002	72.1	0.72522	11642.90	1.4532	76.60	0.8444
Switzerland	6.00	-0.4492	8.00	1.0328	8.00	1.1684	7.00	-0.1123	7.00	0.1456	3.00	0.1599	83.8	1.09267	80.7	1.57032	2560.20	-0.3608	78.40	1.0366

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Country	Ineq_Health_Perceived HealthWomen		Ineq_Health_Perceived HealthYoung		Ineq_Health_Perceived HealthOld		Ineq_Health_Perceived HealthPrimary		Ineq_Health_Perceived HealthSecondary		Ineq_Health_Perceived HealthTertiary		AnxiolyticConsumption		AntidepressantConsumption		WorkIllness		MentalProfessionals	
	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	72.50	0.9106	93.10	0.7150	55.50	1.0044	62.20	0.9106	75.90	0.7245	84.40	0.7183	24.30	-0.0372	81.90	0.5306	44.00	-0.0741	20.06	0.1357
Denmark	60.70	-0.2205	96.70	1.3795	27.50	-0.5638	40.30	-1.0020	60.10	-0.6138	79.90	0.1486	6.90	-0.8529	58.80	-0.2887	60.70	1.5836	12.36	-0.6353
Estonia	67.90	0.4697	84.00	-0.9648	57.20	1.0996	65.10	1.1638	69.80	0.2078	77.00	-0.2186	13.20	-0.5575	37.10	-1.0583	40.20	-0.4513	22.65	0.3950
Finland	49.70	-1.2749	80.90	-1.5370	17.60	-1.1182	38.40	-1.1679	48.40	-1.6049	62.00	-2.1178	17.40	-0.3607	74.80	0.2788	39.70	-0.5010	16.19	-0.2518
France	67.10	0.3930	84.80	-0.8171	47.40	0.5507	51.20	-0.0501	69.70	0.1993	79.20	0.0599	17.40	-0.3607	64.60	-0.0830	53.20	0.8391	23.59	0.4891
Germany	65.50	0.2396	90.30	0.1981	43.40	0.3267	54.80	0.2643	69.20	0.1570	78.60	-0.0160	3.20	-1.0263	60.30	-0.2355	49.40	0.4619	20.91	0.2208
Hungary	74.20	1.0736	97.70	1.5641	40.50	0.1643	57.80	0.5263	85.30	1.5207	89.00	1.3007	32.40	0.3425	30.40	-1.2959	33.90	-1.0767	5.80	-1.2921
Lithuania	42.90	-1.9267	84.90	-0.7987	11.30	-1.4711	39.30	-1.0893	41.60	-2.1809	61.60	-2.1684	32.80	0.3613	35.40	-1.1186	49.60	0.4818	9.99	-0.8725
Poland	74.30	1.0832	85.80	-0.6325	65.40	1.5588	66.30	1.2686	74.90	0.6398	85.00	0.7943	12.00	-0.6138	39.80	-0.9625	42.20	-0.2528	48.04	2.9372
Portugal	56.80	-0.5943	91.60	0.4381	19.80	-0.9950	40.90	-0.9496	57.30	-0.8510	77.90	-0.1047	84.80	2.7990	131.10	2.2754	56.10	1.1270	24.18	0.5482
Slovak Republic	44.70	-1.7542	84.00	-0.9648	14.20	-1.3087	34.90	-1.4735	68.80	0.1231	74.90	-0.4845	26.80	0.0800	47.60	-0.6859	29.50	-1.5135	13.00	-0.5712
Slovenia	62.80	-0.0192	95.00	1.0657	23.60	-0.7822	51.80	0.0023	65.50	-0.1564	82.10	0.4271	12.30	-0.5997	63.30	-0.1291	59.90	1.5042	21.30	0.2599
Spain	61.60	-0.1342	87.90	-0.2449	36.40	-0.0653	44.20	-0.6614	65.80	-0.1310	78.90	0.0219	57.90	1.5379	86.20	0.6831	45.70	0.0946	11.95	-0.6763
Sweden	70.70	0.7381	95.70	1.1949	42.20	0.2595	60.70	0.7796	82.90	1.3174	87.20	1.0728	10.70	-0.6747	105.40	1.3640	37.80	-0.6896	9.69	-0.9026
Switzerland	73.60	1.0161	86.00	-0.5956	61.50	1.3404	68.70	1.4782	75.00	0.6483	83.20	0.5664	24.30	-0.0372	87.40	0.7256	29.30	-1.5333	20.86	0.2158

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Country	StudentReadingSkills		StudentMathSkills		StudentScienceSkills		Ineq_Knowledge_StudentMathMen		Ineq_Knowledge_StudentMathWomen		Ineq_Knowledge_StudentScienceMen		Ineq_Knowledge_StudentScienceWomen		Ineq_Knowledge_StudentReadingSecondary		Ineq_Knowledge_StudentReadingTertiary		Ineq_Knowledge_StudentMathSecondary	
	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	492.86	-0.1346	508.07	0.5587	498.77	0.2112	514.13	0.8038	502.05	0.2990	501.19	0.4604	496.37	-0.0362	470.88	-0.4501	517.99	0.1085	478.09	0.0894
Denmark	490.22	-0.2700	499.47	0.0531	496.79	0.1110	501.19	0.0571	497.67	0.0432	495.99	0.1962	497.62	0.0246	478.02	-0.0501	518.05	0.1118	479.51	0.1775
Estonia	501.13	0.2896	509.40	0.6369	492.64	-0.0989	511.34	0.6428	507.45	0.6144	491.57	-0.0284	493.71	-0.1655	476.50	-0.1352	509.77	-0.3426	484.74	0.5019
Finland	523.02	1.4123	523.41	1.4606	530.11	1.7967	527.64	1.5833	519.19	1.3001	527.63	1.8038	532.59	1.7240	506.66	1.5544	527.59	0.6353	504.19	1.7084
France	520.08	1.2615	507.30	0.5135	521.88	1.3803	504.31	0.2371	510.41	0.7873	510.18	0.9172	534.04	1.7945	494.41	0.8681	535.35	1.0612	479.70	0.1893
Germany	492.61	-0.1474	495.41	-0.1856	492.98	-0.0817	498.54	-0.0958	492.18	-0.2775	492.51	0.0194	493.46	-0.1776	473.05	-0.3285	523.31	0.4005	467.60	-0.5613
Hungary	457.41	-1.9527	451.37	-2.7748	451.63	-2.1736	451.53	-2.8083	451.21	-2.6704	446.07	-2.3401	457.36	-1.9320	443.98	-1.9571	486.04	-1.6448	434.82	-2.5946
Lithuania	478.70	-0.8608	496.13	-0.1433	487.25	-0.3716	499.56	-0.0369	492.79	-0.2418	482.99	-0.4643	491.38	-0.2787	469.98	-0.5005	499.91	-0.8837	462.65	-0.8683
Poland	499.45	0.2034	500.96	0.1407	490.41	-0.2117	497.50	-0.1558	504.51	0.4427	485.15	-0.3545	495.80	-0.0639	492.38	0.7544	524.71	0.4773	481.53	0.3028
Portugal	511.86	0.8399	515.65	1.0044	511.04	0.8319	516.35	0.9319	514.95	1.0524	510.90	0.9538	511.17	0.6831	494.50	0.8732	547.92	1.7510	493.36	1.0366
Slovak Republic	491.80	-0.1889	492.49	-0.3573	491.68	-0.1475	496.93	-0.1887	487.91	-0.5269	494.18	0.1043	489.10	-0.3895	493.14	0.7970	524.94	0.4899	483.57	0.4293
Slovenia	457.98	-1.9235	486.16	-0.7294	464.05	-1.5453	488.46	-0.6774	483.90	-0.7611	461.22	-1.5704	466.84	-1.4713	442.15	-2.0596	475.23	-2.2381	465.90	-0.6667
Spain	495.35	-0.0069	508.90	0.6075	507.01	0.6281	509.19	0.5187	508.59	0.6810	502.25	0.5143	512.00	0.7234	486.01	0.3975	521.78	0.3165	492.00	0.9522
Sweden	514.00	0.9496	481.39	-1.0099	483.25	-0.5740	484.57	-0.9019	478.14	-1.0975	484.44	-0.3906	482.03	-0.7331	482.96	0.2267	512.54	-0.1906	469.97	-0.4143
Switzerland	505.79	0.5286	502.39	0.2248	499.44	0.2451	501.76	0.0900	503.01	0.3551	495.65	0.1789	503.25	0.2982	479.09	0.0099	515.06	-0.0523	472.10	-0.2822

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Country	Ineq_Knowledge_StudentMathTertiary		Ineq_Knowledge_StudentScienceSecondary		Ineq_Knowledge_StudentScienceTertiary		Ineq_Knowledge_StudentMath_Vertical		Ineq_Knowledge_StudentScience_Vertical		SocialSupport		SatisfactionRelationships		Ineq_SC_SocialSupportMen		Ineq_SC_SocialSupportWomen		Ineq_SC_PersonalRelationshipsMen	
	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	525.75	0.6153	471.63	-0.3146	522.18	0.2216	1.70	1.1684	1.70	0.8334	92.11	0.2975	7.92	-0.5544	91.67	0.3941	91.31	0.1291	7.89	-0.4699
Denmark	526.74	0.6690	480.90	0.1416	526.48	0.4246	1.60	-0.0835	1.70	0.8334	91.69	0.2072	8.30	0.4362	88.67	-0.3507	90.71	-0.0256	8.21	0.3976
Estonia	521.65	0.3931	477.11	-0.0449	512.21	-0.2491	1.50	-1.3353	1.60	-0.7292	95.67	1.0628	8.24	0.2798	95.29	1.2928	95.60	1.2356	8.12	0.1536
Finland	529.33	0.8094	520.66	2.0984	543.09	1.2087	1.50	-1.3353	1.50	-2.2919	91.22	0.1062	7.89	-0.6326	89.88	-0.0503	91.05	0.0621	7.78	-0.7680
France	519.75	0.2901	497.38	0.9526	539.89	1.0576	1.50	-1.3353	1.60	-0.7292	95.93	1.1186	8.42	0.7490	93.12	0.7541	95.31	1.1608	8.31	0.6686
Germany	514.54	0.0077	468.24	-0.4815	518.61	0.0531	1.70	1.1684	1.70	0.8334	91.38	0.1406	7.94	-0.5023	91.21	0.2799	92.14	0.3432	7.90	-0.4427
Hungary	469.10	-2.4553	432.10	-2.2601	473.23	-2.0891	1.70	1.1684	1.70	0.8334	78.95	-2.5313	7.08	-2.7442	80.12	-2.4734	81.23	-2.4707	7.07	-2.6926
Lithuania	495.63	-1.0173	473.21	-0.2369	501.88	-0.7367	1.50	-1.3353	1.60	-0.7292	88.15	-0.5537	7.75	-0.9976	84.51	-1.3835	86.76	-1.0444	7.63	-1.1746
Poland	511.59	-0.1522	476.05	-0.0971	509.64	-0.3704	1.60	-0.0835	1.70	0.8334	96.57	1.2562	8.54	1.0619	94.56	1.1116	94.26	0.8900	8.45	1.0481
Portugal	546.42	1.7357	488.72	0.5264	548.09	1.4447	1.60	-0.0835	1.60	-0.7292	83.76	-1.4974	8.13	-0.0070	87.21	-0.7132	89.46	-0.3480	8.06	-0.0090
Slovak Republic	524.02	0.5216	493.43	0.7582	532.60	0.7135	1.70	1.1684	1.70	0.8334	88.47	-0.4849	8.20	0.1755	87.49	-0.6437	85.16	-1.4571	8.24	0.4789
Slovenia	495.55	-1.0216	449.58	-1.3998	483.68	-1.5958	1.70	1.1684	1.70	0.8334	89.88	-0.1819	8.23	0.2537	89.82	-0.0652	91.10	0.0750	8.19	0.3434
Spain	525.41	0.5969	488.37	0.5092	533.59	0.7602	1.60	-0.0835	1.60	-0.7292	93.88	0.6780	8.56	1.1140	92.42	0.5803	92.06	0.3226	8.48	1.1295
Sweden	503.59	-0.5858	480.56	0.1248	509.74	-0.3657	1.60	-0.0835	1.60	-0.7292	90.47	-0.0550	8.25	0.3059	93.37	0.8161	93.27	0.6347	8.22	0.4247
Switzerland	506.90	-0.4064	472.41	-0.2763	507.38	-0.4771	1.60	-0.0835	1.70	0.8334	92.76	0.4372	8.54	1.0619	91.90	0.4512	92.72	0.4928	8.40	0.9126

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	Ineq_SC_PersonalRelationshipsWomen		Ineq_SC_SocialSupportMiddle		Ineq_SC_SocialSupportOld		Ineq_SC_PersonalRelationshipsYoung		Ineq_SC_PersonalRelationshipsMiddle		Ineq_SC_PersonalRelationshipsOld		Ineq_SC_SocialSupportSecondary		Ineq_SC_PersonalRelationshipsPrimary		Ineq_SC_PersonalRelationshipsSecondary		Ineq_SC_PersonalRelationships_Vertical	
Country	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	7.95	-0.6042	91.63	0.1623	90.15	0.5067	8.06	-0.6980	7.82	-0.6827	7.94	-0.4154	90.66	-0.1473	7.74	-0.6014	7.89	-0.6188	1.60	-1.1098
Denmark	8.38	0.4577	89.74	-0.3390	87.36	-0.0377	8.43	0.3161	8.17	0.3502	8.36	0.4901	89.77	-0.4003	8.06	0.1044	8.29	0.3532	1.80	-0.0694
Estonia	8.37	0.4330	95.57	1.2074	93.70	1.1995	7.91	-1.1092	8.01	-0.1220	8.54	0.8782	95.71	1.2886	8.27	0.5676	8.29	0.3532	1.90	0.4508
Finland	7.98	-0.5301	90.56	-0.1215	87.38	-0.0338	8.07	-0.6706	7.89	-0.4761	7.84	-0.6310	90.12	-0.3008	7.64	-0.8220	7.87	-0.6674	2.10	1.4913
France	8.52	0.8034	96.04	1.3321	91.18	0.7077	8.41	0.2613	8.24	0.5568	8.52	0.8351	95.64	1.2687	8.47	1.0088	8.37	0.5476	1.50	-1.6300
Germany	7.97	-0.5548	91.94	0.2446	90.73	0.6199	8.30	-0.0402	7.89	-0.4761	7.87	-0.5663	92.43	0.3560	7.83	-0.4029	7.92	-0.5459	1.80	-0.0694
Hungary	7.09	-2.7279	82.40	-2.2859	74.15	-2.6156	7.40	-2.5071	7.05	-2.9552	7.01	-2.4204	83.08	-2.3026	6.96	-2.3219	7.08	-2.5871	2.20	2.0115
Lithuania	7.83	-0.9005	86.20	-1.2780	81.50	-1.1813	8.05	-0.7255	7.81	-0.7122	7.64	-1.0622	86.25	-1.4012	7.53	-1.0646	7.67	-1.1534	1.90	0.4508
Poland	8.63	1.0750	95.44	1.1729	91.64	0.7975	8.62	0.8369	8.24	0.5568	8.72	1.2663	94.58	0.9673	8.58	1.2514	8.66	1.2522	1.70	-0.5896
Portugal	8.19	-0.0115	88.38	-0.6997	85.46	-0.4085	8.50	0.5080	8.18	0.3797	7.92	-0.4585	88.37	-0.7984	7.79	-0.4911	8.11	-0.0842	1.80	-0.0694
Slovak Republic	8.18	-0.0362	87.55	-0.9199	81.48	-1.1852	8.66	0.9466	8.30	0.7339	8.08	-0.1135	90.22	-0.2724	8.09	0.1706	8.35	0.4990	1.90	0.4508
Slovenia	8.26	0.1613	90.48	-0.1427	88.27	0.1399	8.46	0.3984	8.25	0.5863	8.10	-0.0704	90.54	-0.1814	8.02	0.0162	8.21	0.1588	2.00	0.9711
Spain	8.63	1.0750	93.67	0.7034	88.65	0.2140	8.88	1.5496	8.47	1.2356	8.50	0.7920	93.25	0.5891	8.36	0.7661	8.58	1.0578	1.60	-1.1098
Sweden	8.27	0.1860	92.95	0.5125	91.92	0.8521	8.49	0.4806	8.24	0.5568	8.17	0.0805	94.48	0.9389	8.13	0.2588	8.28	0.3289	1.70	-0.5896
Switzerland	8.67	1.1738	92.72	0.4515	89.73	0.4248	8.48	0.4532	8.21	0.4683	8.78	1.3956	92.57	0.3958	8.72	1.5602	8.60	1.1064	1.70	-0.5896

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	Ineq_SC_PersonalRelationshipsTertiary		Corruption		TrustLegalSystem		TrustPolice		TrustPolititians		TrustPoliticalParties		Env_CO2Emmissions		Env_Phosphorus		Env_Nitrogen		Env_BlueWater	
Country	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	8.07	-0.4754	75.00	0.5331	5.34	-0.1275	6.54	-0.1935	4.26	0.4562	4.26	0.4786	-9.10	0.1608	-2.90	1.1382	-38.30	1.2768	205.00	0.0673
Denmark	8.45	0.6679	59.00	-0.6407	7.68	1.8534	8.00	1.6652	5.20	1.4583	5.30	1.5406	-9.40	0.0544	-2.70	1.2955	-54.20	0.4815	360.00	0.6469
Estonia	8.20	-0.0842	88.00	1.4869	5.93	0.3719	7.03	0.4303	3.89	0.0618	3.75	-0.0422	-10.20	-0.2294	-3.40	0.7448	-64.40	-0.0287	322.00	0.5048
Finland	8.03	-0.5957	73.00	0.3864	7.17	1.4217	8.12	1.8180	4.90	1.1385	5.03	1.2649	-12.60	-1.0809	-3.50	0.6661	-62.50	0.0664	128.00	-0.2206
France	8.45	0.6679	85.00	1.2668	5.25	-0.2037	6.47	-0.2826	3.54	-0.3113	3.04	-0.7672	-13.10	-1.2583	-5.60	-0.9861	-87.40	-1.1791	363.00	0.6581
Germany	8.07	-0.4754	72.00	0.3130	6.13	0.5412	7.10	0.5194	3.96	0.1364	3.99	0.2029	-7.10	0.8704	-6.30	-1.5368	-78.50	-0.7339	235.00	0.1795
Hungary	7.24	-2.9725	45.00	-1.6679	5.52	0.0248	6.40	-0.3718	3.93	0.1045	3.75	-0.0422	-11.70	-0.7616	-3.50	0.6661	-42.70	1.0567	-310.00	-1.8584
Lithuania	8.01	-0.6559	58.00	-0.7141	4.65	-0.7117	6.32	-0.4736	3.11	-0.7696	2.83	-0.9817	-5.10	1.5800	-5.60	-0.9861	-80.90	-0.8539	371.00	0.6880
Poland	8.41	0.5476	84.00	1.1934	4.32	-0.9910	5.76	-1.1866	3.11	-0.7696	3.16	-0.6447	-15.60	-2.1453	-6.60	-1.7728	-99.10	-1.7642	267.00	0.2991
Portugal	8.26	0.0963	60.00	-0.5674	4.17	-1.1180	6.20	-0.6264	2.73	-1.1747	2.81	-1.0021	-7.70	0.6576	-4.40	-0.0420	-65.40	-0.0787	412.00	0.8413
Slovak Republic	8.44	0.6378	64.00	-0.2739	4.19	-1.1011	5.16	-1.9504	3.35	-0.5138	3.51	-0.2873	-6.10	1.2252	-4.00	0.2727	-39.40	1.2217	-401.00	-2.1987
Slovenia	8.44	0.6378	50.00	-1.3010	3.92	-1.3297	6.15	-0.6900	2.67	-1.2387	2.70	-1.1144	-10.50	-0.3359	-3.80	0.4301	-71.70	-0.3938	372.00	0.6918
Spain	8.64	1.2396	60.00	-0.5674	4.78	-0.6016	6.76	0.0866	2.55	-1.3666	2.50	-1.3187	-9.00	0.1963	-2.90	1.1382	-36.40	1.3718	315.00	0.4786
Sweden	8.42	0.5777	58.00	-0.7141	6.51	0.8629	7.00	0.3921	4.91	1.1491	4.99	1.2241	-7.50	0.7285	-5.20	-0.6714	-50.30	0.6766	-200.00	-1.4471
Switzerland	8.29	0.1865	85.00	1.2668	6.80	1.1084	7.37	0.8632	5.37	1.6395	5.25	1.4896	-8.60	0.3382	-4.80	-0.3567	-86.20	-1.1190	366.00	0.6693

(Cont.)

Country	Env_eHANPP		Env_EcoFootprint		Env_MaterialFootprint		Homicides		FeelingSafe		RoadDeaths		CrimeRate		Ineq_Safety_SafeNight Men		Ineq_Safety_SafeNight Women		Ineq_Safety_SafeNight Middle	
	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	-0.40	0.5210	-4.10	-1.3121	-18.40	0.0851	1.69	0.6770	64.77	-1.0206	5.30	0.1828	44.17	1.2037	76.70	-0.5357	55.91	-0.7197	71.97	-0.4701
Denmark	0.20	1.1222	-2.80	0.0860	-15.10	0.5990	0.50	-0.7397	72.39	-0.3314	6.20	0.7023	25.31	-0.9102	76.99	-0.5045	56.85	-0.6330	69.42	-0.7225
Estonia	-0.50	0.4208	-2.60	0.3011	-19.90	-0.1485	0.50	-0.7397	87.06	0.9953	2.96	-1.1679	26.72	-0.7521	91.97	1.1080	73.60	0.9121	87.43	1.0596
Finland	-1.90	-0.9820	-3.80	-0.9894	-10.20	1.3620	2.00	1.0460	74.89	-0.1053	4.90	-0.0481	23.38	-1.1265	78.23	-0.3710	59.45	-0.3932	72.26	-0.4415
France	-1.80	-0.8818	-3.10	-0.2366	-23.70	-0.7402	1.20	0.0936	87.57	1.0415	4.34	-0.3714	27.01	-0.7196	93.25	1.2458	72.89	0.8466	87.98	1.1140
Germany	-0.30	0.6212	-2.50	0.4087	-15.60	0.5211	0.94	-0.2159	73.48	-0.2329	5.02	0.0212	49.20	1.7674	77.28	-0.4733	62.71	-0.0924	75.83	-0.0882
Hungary	-0.30	0.6212	-2.20	0.7313	-28.40	-1.4721	1.00	-0.1444	57.49	-1.6790	6.52	0.8870	44.14	1.2003	67.51	-1.5249	47.24	-1.5195	61.10	-1.5457
Lithuania	-1.90	-0.9820	-3.90	-1.0970	-9.10	1.5333	3.70	3.0698	58.19	-1.6157	8.10	1.7990	37.21	0.4236	70.43	-1.2106	50.97	-1.1754	63.29	-1.3290
Poland	-2.90	-1.9840	-3.10	-0.2366	-31.80	-2.0015	0.73	-0.4659	93.01	1.5335	2.04	-1.6990	33.25	-0.0202	96.23	1.5665	84.03	1.8743	92.49	1.5603
Portugal	0.00	0.9218	-2.10	0.8389	-12.50	1.0039	0.50	-0.7397	73.91	-0.1940	7.54	1.4758	29.32	-0.4607	75.82	-0.6304	59.38	-0.3996	70.27	-0.6384
Slovak Republic	-0.30	0.6212	-1.60	1.3766	-18.50	0.0696	0.70	-0.5016	78.97	0.2637	6.56	0.9101	29.89	-0.3968	83.47	0.1930	61.49	-0.2050	79.93	0.3175
Slovenia	0.20	1.1222	-2.10	0.8389	-26.40	-1.1606	0.48	-0.7635	67.51	-0.7728	3.80	-0.6831	29.74	-0.4137	70.83	-1.1675	52.44	-1.0398	65.19	-1.1410
Spain	-1.60	-0.6814	-2.80	0.0860	-18.50	0.0696	0.70	-0.5016	90.43	1.3001	4.40	-0.3367	21.79	-1.3047	93.47	1.2694	78.96	1.4066	90.31	1.3446
Sweden	-0.20	0.7214	-1.70	1.2691	-18.50	0.0696	1.08	-0.0492	84.05	0.7231	3.87	-0.6426	33.13	-0.0337	84.14	0.2652	73.77	0.9278	81.95	0.5174
Switzerland	-2.10	-1.1824	-4.80	-2.0649	-17.60	0.2097	1.10	-0.0254	77.10	0.0945	3.20	-1.0294	47.20	1.5433	88.83	0.7700	65.99	0.2101	81.40	0.4630

(Cont.)

Country	Ineq_Safety_SafeNightOld		Ineq_Safety_SafeNightSecondary		LifeSatisfaction		NegativeAffect		LackPhysicalActivity		Accomplishment		Ineq_SWB_LifeSatisfactionMen		Ineq_SWB_LifeSatisfactionWomen		Ineq_SWB_NegativeAffectMen		Ineq_SWB_NegativeAffectWomen	
	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	58.88	-0.7595	64.92	-0.7835	7.60	0.4947	16.09	0.4017	35.75	0.7645	2.17	-0.2219	7.60	0.4607	7.50	0.3097	10.72	-0.3998	14.30	-0.2440
Denmark	63.49	-0.3491	66.77	-0.6045	7.44	0.1721	12.28	-0.3700	31.08	0.0127	1.96	-1.4269	7.50	0.2574	7.40	0.1161	13.04	0.2390	14.85	-0.1324
Estonia	78.86	1.0191	83.04	0.9698	7.76	0.8173	8.20	-1.1963	28.50	-0.4027	2.38	0.9832	7.80	0.8672	7.70	0.6969	7.72	-1.2258	9.70	-1.1770
Finland	62.22	-0.4622	67.22	-0.5609	7.01	-0.6950	9.95	-0.8419	31.99	0.1592	2.20	-0.0497	6.90	-0.9620	7.10	-0.4646	10.38	-0.4934	13.43	-0.4204
France	77.67	0.9132	85.28	1.1865	8.12	1.5432	7.92	-1.2530	16.56	-2.3249	2.16	-0.2793	8.10	1.4769	8.20	1.6648	8.22	-1.0881	9.08	-1.3028
Germany	64.11	-0.2940	69.71	-0.3200	7.25	-0.2110	17.03	0.5921	29.32	-0.2707	2.00	-1.1974	7.30	-0.1490	7.20	-0.2710	12.33	0.0435	13.71	-0.3636
Hungary	51.72	-1.3969	58.87	-1.3689	6.44	-1.8443	17.50	0.6873	37.66	1.0720	2.31	0.5815	6.50	-1.7750	6.40	-1.8197	19.54	2.0286	24.52	1.8291
Lithuania	53.81	-1.2109	60.22	-1.2382	6.74	-1.2394	17.45	0.6771	29.54	-0.2353	2.34	0.7536	6.70	-1.3685	6.70	-1.2389	14.56	0.6575	18.13	0.5329
Poland	88.95	1.9174	90.03	1.6461	7.98	1.2609	10.15	-0.8014	31.70	0.1125	2.22	0.0650	8.00	1.2736	8.00	1.2776	6.79	-1.4818	10.13	-1.0898
Portugal	62.83	-0.4079	67.53	-0.5309	7.78	0.8576	11.51	-0.5259	32.46	0.2348	2.38	0.9832	7.80	0.8672	7.80	0.8905	11.64	-0.1465	14.80	-0.1425
Slovak Republic	63.47	-0.3509	75.48	0.2383	6.69	-1.3402	18.33	0.8554	43.40	1.9960	2.44	1.3275	6.80	-1.1652	6.60	-1.4325	14.99	0.7759	23.04	1.5289
Slovenia	54.67	-1.1343	61.46	-1.1183	7.10	-0.5135	14.25	0.0290	34.90	0.6276	2.22	0.0650	7.10	-0.5555	7.10	-0.4646	14.61	0.6713	16.44	0.1901
Spain	82.11	1.3084	87.29	1.3810	7.31	-0.0901	17.84	0.7561	32.22	0.1962	2.43	1.2701	7.30	-0.1490	7.30	-0.0774	13.02	0.2335	20.96	1.1070
Sweden	75.24	0.6969	80.06	0.6814	7.30	-0.1102	25.10	2.2266	26.81	-0.6747	2.00	-1.1974	7.40	0.0542	7.30	-0.0774	16.93	1.3100	19.71	0.8534
Switzerland	73.15	0.5108	77.38	0.4221	7.80	0.8979	8.00	-1.2368	23.13	-1.2672	1.92	-1.6564	7.80	0.8672	7.80	0.8905	8.09	-1.1239	9.74	-1.1689

(Cont.)

	Ineq_SWB_LifeSatisfactionYoung		Ineq_SWB_LifeSatisfactionMiddle		Ineq_SWB_LifeSatisfactionOld		Ineq_SWB_NegativeAffectYoung		Ineq_SWB_NegativeAffectMiddle		Ineq_SWB_NegativeAffectOld		Ineq_SWB_LifeSatisfactionPrimary		Ineq_SWB_LifeSatisfactionSecondary		Ineq_SWB_LifeSatisfactionTertiary		Ineq_SWB_NegativeAffectPrimary	
Country	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	7.84	0.1804	7.60	0.2828	7.50	0.5641	11.18	1.2637	12.96	-0.3196	12.88	-0.5242	7.20	0.3225	7.50	0.2943	7.90	0.3646	18.94	0.1625
Denmark	8.08	0.9444	7.62	0.3346	7.05	-0.1098	7.68	-0.6638	13.26	-0.2243	18.45	0.2733	6.80	-0.3017	7.40	0.0936	8.00	0.6525	17.32	-0.0570
Estonia	7.54	-0.7746	7.72	0.5932	7.88	1.1332	8.51	-0.2067	10.11	-1.2258	7.83	-1.2472	7.70	1.1027	7.80	0.8962	7.80	0.0768	7.26	-1.4205
Finland	7.64	-0.4563	7.25	-0.6225	6.63	-0.7389	7.20	-0.9281	10.77	-1.0159	15.54	-0.1434	6.70	-0.4577	6.80	-1.1103	7.40	-1.0747	14.25	-0.4731
France	8.16	1.1991	8.11	1.6021	8.12	1.4927	9.13	0.1347	11.83	-0.6789	6.63	-1.4190	8.00	1.5709	8.10	1.4982	8.30	1.5162	7.34	-1.4096
Germany	7.73	-0.1698	7.35	-0.3639	7.07	-0.0799	9.14	0.1402	13.29	-0.2147	14.72	-0.2608	6.90	-0.1456	7.20	-0.3077	7.60	-0.4990	17.98	0.0324
Hungary	6.96	-2.6210	6.57	-2.3815	6.20	-1.3829	10.44	0.8562	20.39	2.0426	28.58	1.7236	6.10	-1.3940	6.50	-1.7122	6.90	-2.5141	32.17	1.9556
Lithuania	7.48	-0.9656	7.09	-1.0364	6.34	-1.1732	8.47	-0.2287	15.44	0.4689	21.66	0.7328	6.30	-1.0819	6.50	-1.7122	7.40	-1.0747	21.28	0.4797
Poland	7.97	0.5942	7.85	0.9295	8.08	1.4328	8.30	-0.3223	10.26	-1.1781	7.22	-1.3345	7.90	1.4148	8.00	1.2975	8.00	0.6525	10.11	-1.0342
Portugal	8.20	1.3264	7.96	1.2140	7.46	0.5042	7.37	-0.8345	12.21	-0.5581	17.69	0.1645	7.40	0.6346	7.70	0.6956	8.10	0.9404	21.07	0.4512
Slovak Republic	7.78	-0.0106	7.18	-0.8036	6.24	-1.3229	8.30	-0.3223	16.54	0.8186	26.25	1.3900	6.20	-1.2380	7.30	-0.1070	7.60	-0.4990	27.38	1.3064
Slovenia	7.82	0.1167	7.29	-0.5191	6.52	-0.9036	6.70	-1.2035	15.77	0.5738	21.32	0.6842	6.40	-0.9259	7.00	-0.7090	7.90	0.3646	18.45	0.0961
Spain	8.07	0.9126	7.54	0.1276	6.84	-0.4243	9.42	0.2944	17.60	1.1556	19.81	0.4680	6.60	-0.6138	7.20	-0.3077	8.00	0.6525	21.59	0.5217
Sweden	7.73	-0.1698	7.51	0.0500	7.05	-0.1098	13.80	2.7066	17.91	1.2542	21.63	0.7285	6.90	-0.1456	7.50	0.2943	7.80	0.0768	23.29	0.7521
Switzerland	7.75	-0.1061	7.72	0.5932	7.87	1.1183	7.64	-0.6858	11.14	-0.8983	7.91	-1.2358	7.80	1.2588	7.80	0.8962	7.90	0.3646	7.68	-1.3635

(Cont.)

Country	Ineq_SWB_NegativeAffectSecondary		Ineq_SWB_NegativeAffectTertiary		Ineq_SWB_Lifesatisfaction_Vertical	
	Original Value	Standardized Value	Original Value	Standardized Value	Original Value	Standardized Value
Belgium	13.01	-0.0997	10.45	-0.0870	1.70	-1.2751
Denmark	13.80	0.1434	9.82	-0.3449	2.20	0.0718
Estonia	8.65	-1.4415	8.89	-0.7255	2.20	0.0718
Finland	12.92	-0.1274	9.19	-0.6027	2.30	0.3412
France	9.25	-1.2568	8.72	-0.7951	1.50	-1.8138
Germany	12.36	-0.2997	11.41	0.3059	2.00	-0.4669
Hungary	18.76	1.6698	13.39	1.1162	2.60	1.1493
Lithuania	16.48	0.9682	12.46	0.7356	2.30	0.3412
Poland	9.02	-1.3276	7.20	-1.4172	1.90	-0.7363
Portugal	12.49	-0.2597	9.14	-0.6232	2.00	-0.4669
Slovak Republic	14.38	0.3219	12.12	0.5965	2.90	1.9575
Slovenia	16.24	0.8943	9.07	-0.6518	2.70	1.4187
Spain	15.98	0.8143	15.69	2.0576	2.30	0.3412
Sweden	17.37	1.2421	14.17	1.4355	2.10	-0.1975
Switzerland	9.30	-1.2414	8.22	-0.9997	1.90	-0.7363

7. Dimension Creation

We performed several reliability tests for the potential dimension Income and Wealth and the results show a Cronbach's Alpha very low[47]. Even so, the highest Cronbach Alpha resulted from a test with the standardized indicators as depicted below:

Reliability Statistics

Cronbach's Alpha	N of Items
.356	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Zscore: OECD_Relative Income Poverty	.0000000	1.000	.216	.
Zscore: OECD_Difficulty Making Ends Meet	.0000000	1.000	.216	.

Figure 39 – Income and Wealth Reliability Test Results

With such a result we are unable to create an Income and Wealth dimension.

The Cronbach Alpha for the dimension Work Job Quality, in which the aggregated indicators were Long-Term Unemployment Rate + Labour Market Insecurity + Youth not in Employment, Education or Training + Long Hours in Paid Work, resulted in a reliability measure of 0,6:

Reliability Statistics

Cronbach's Alpha	N of Items
.629	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Long-term unemployment rate	21.6307	40.034	.663	.352
OECD_Labour market insecurity	17.2567	44.437	.264	.736
OECD_Youth not in employment, education or training	14.7900	44.110	.714	.356
OECD_Long hours in paid work	20.6067	70.261	.139	.695

Figure 40 – Work and Job Quality 1 Reliability Test Results

[47] Cronbach Alpha indicator informs about the reliability of a construct or a dimension. The indicator should vary between 0 and 1 and the reliability is better whenever the result is above 0,5 and closer to 1.

We were able the test a high reliability value for an additional construct under Work and Job Quality Dimension regarding Employment – Employment Rate + Employment Related Inequalities – with a Cronbach Alpha of 0,9:

Reliability Statistics

Cronbach's Alpha	N of Items
.931	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Employment rate	546.2580	2361.908	.954	.915
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Men	541.4880	2561.893	.777	.927
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Women	551.0100	2181.638	.954	.909
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Young	588.6300	2049.296	.751	.929
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Middle Aged	540.7493	2512.793	.773	.925
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Old	563.4033	1953.610	.886	.916
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Primary	567.1067	2349.125	.543	.938
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Secondary	546.0493	2310.382	.891	.915
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Terciary	536.7400	2580.282	.756	.928

Figure 41 – Work and Job Quality 2 Reliability Test Results

The reliability for Unemployment related Inequalities under the Work and Job Quality dimension was of 0,8, for which we were able to create a dimension as well:

Reliability Statistics

Cronbach's Alpha	N of Items
.865	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Men	147.1907	2568.732	.884	.864
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Women	146.7833	2446.321	.788	.854
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Men	140.1820	2600.526	.569	.871
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Women	140.1580	2623.349	.640	.872
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Primary	102.2240	1466.658	.889	.814
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Secondary	108.1993	1490.146	.936	.798
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Tertiary	116.1387	1539.161	.948	.793

Figure 42 – Work and Job Quality 3 Reliability Test Results

The Long Hours related Inequalities also provided a 0,8 Cronbach Alpha under the Work and Job Quality dimension:

Reliability Statistics

Cronbach's Alpha	N of Items
.880	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Men	11.1480	38.407	.849	.801
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Women	14.8927	53.652	.914	.852
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Middle Aged	12.7553	44.987	.898	.804
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Old	12.5740	34.893	.650	.942

Figure 43 – Work and Job Quality 4 Reliability Test Results

In terms of the Work Environment dimension we were able to successfully test the dimension considering the indicators Engagement with the Organization + Colleagues Trust + Hierarchy Trust + Perception of Individual Value with a Cronbach Alpha of 0,8:

Reliability Statistics

Cronbach's Alpha	N of Items
.801	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Eurofund_Engagement with Organization	204.6067	585.176	.673	.825
Eurofund_Colleagues Trust	197.3333	318.542	.851	.615
Eurofund_Hierarchy Trust	208.2667	357.325	.694	.709
Eurofund_Individual Value Perception of Work	207.7333	360.400	.568	.792

Figure 44 – Work Environment and Conditions 1 Reliability Test Results

We were able to additionally test the reliability of an additional dimension under the Work Environment construct related with the worked hours with a Cronbach Alpha of 0,58:

Reliability Statistics

Cronbach's Alpha	N of Items
.584	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Eurofund_Paid Hours Worked	96.4533	56.590	.479	.413
Eurofund_Paid & Unpaid Hours Worked	66.6333	125.874	.475	.483
Statista_Inequalities in the work environment - Gender pay gap	137.2600	104.393	.367	.522

Figure 45 – Work Environment and Conditions 2 Reliability Test Results

Regarding the construct Housing we were able to successfully test the reliability of one dimension with the indicators Poor Households without Access to Sanitary Facilities + Overcrowding Rate, with a Cronbach Alpha of 0,7:

Reliability Statistics

Cronbach's Alpha	N of Items
.790	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Poor households without access to basic sanitary facilities	13.0987	95.683	.712	.
OECD_Overcrowding rate	4.7380	41.008	.712	.

Figure 46 – Housing Reliability Test Results

Regarding the Work Life Balance we were able to build one single dimension with a Cronbach Alpha of 0,8:

Reliability Statistics

Cronbach's Alpha	N of Items
.856	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Satisfaction with time use_mean	58.4000	13.829	.971	.812
OECD_Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Men	58.3580	14.209	.864	.820
OECD_Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Women	58.3580	12.356	.950	.801
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Young	58.3580	15.516	.779	.836
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Middle Aged	59.0913	14.182	.770	.825
OECD_Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Old	58.1580	12.550	.880	.808
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Primary	58.2913	12.138	.934	.801
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Secondary	58.2913	13.681	.898	.814
OECD_Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Tertiary	58.4247	14.872	.820	.828
OECD_Inequalities_Vertical inequality Worklife balance: Satisfaction with time use	62.4913	24.622	-.887	.968

Figure 47 – Work Life Balance Reliability Test Results

In terms of the Health dimension we were able to get a Cronbach Alpha of 0,9 for the construct of Perceived Health + Perceived Health related Inequalities:

Reliability Statistics

Cronbach's Alpha	N of Items
.915	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Perceived health_mean	456.3333	4322.600	.375	.930
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Men	452.3600	3728.230	.973	.887
OECD_Inequalities_Horizontal inequality Health: Perceived Health - Women	458.0533	3612.821	.962	.885
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Young	431.8267	4658.981	.324	.928
OECD_Inequalities_Horizontal inequality Age Health: Perceived Health - Old	483.4867	3015.317	.813	.910
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Primary	469.2800	3626.023	.849	.893
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Secondary	453.7067	3577.875	.857	.892
OECD_Inequalities_Horizontal inequality Education Health: Perceived Health - Tertiary	442.3267	4008.962	.857	.899

Figure 48 – Health Reliability Test Results

Regarding the sub-dimension Mental Health, the construct of Anxiolytic Consumption Per Year + Number of Anti-depressants per year provided a reliability of 0,6:

Reliability Statistics

Cronbach's Alpha	N of Items
.664	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Statista_Anxiolytic drug consumption	66.9400	795.063	.516	.
Statista_Antidepressant consumption	25.0933	455.038	.516	.

Figure 49 – Mental Health Reliability Test Results

For the dimension Knowledge and Skills we were able to retrieve a Cronbach Alpha of 0,9 for all the indicators in the dimension:

Reliability Statistics

Cronbach's Alpha	N of Items
.974	15

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Student skills (reading)_mean	5964.2713	43096.392	.847	.972
OECD_Student skills (maths)_mean	5961.1887	43591.429	.909	.971
OECD_Student skills (science)_mean	5965.1600	42089.797	.969	.970
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Men	5959.5553	43615.044	.887	.971
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Women	5962.8247	43581.793	.904	.971
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Men	5967.6273	42031.766	.981	.970
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Women	5962.6407	42167.524	.917	.971
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Secondary	5980.8413	43364.612	.895	.971
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Tertiary	5943.7427	43537.045	.851	.972
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Secondary	5983.1067	43905.616	.913	.971
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Tertiary	5945.3573	43232.630	.882	.971
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Secondary	5981.7320	42256.364	.918	.971
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) -	5942.2693	41779.094	.936	.971
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (maths)	6458.1487	50355.897	-.527	.979
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (science)	6458.1087	50353.335	-.568	.979

Figure 50 – Knowledge and Skills Reliability Test Results

The dimension Social Connections showed a high reliability with a 0,9 Cronbach Alpha for all the indicators under the construct:

Reliability Statistics

Cronbach's Alpha	N of Items
.908	16

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Social support_mean	525.7293	506.679	.909	.891
OECD_Satisfaction with personal relationships_mean	608.3227	701.660	.835	.908
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Men	526.3727	521.944	.981	.885
OECD_Inequalities_Horizontal inequality Social Connections: Social Support - Women	525.6460	532.453	.957	.886
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Men	608.3920	702.801	.810	.908
OECD_Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Women	608.2607	700.436	.848	.908
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Middle Aged	525.4373	533.497	.982	.885
OECD_Inequalities_Horizontal inequality Age Social Connections: Social Support - Old	528.9020	480.166	.946	.891
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Young	608.1407	708.179	.539	.909
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Middle Aged	608.4040	705.970	.705	.909
OECD_Inequalities_Horizontal inequality Age Social Connections: Satisfaction with personal Relationships - Old	608.3227	697.037	.879	.907
OECD_Inequalities_Horizontal inequality Education Social Connections: Social Support - Secondary	525.2773	548.359	.960	.886
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Primary	608.4427	698.197	.850	.907
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Secondary	608.3107	700.957	.810	.908
OECD_Inequalities_Vertical inequality Social Connections: Satisfaction with personal relationships	614.6420	725.888	-.690	.913
OECD_Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Tertiary	608.2273	705.851	.726	.909

Figure 51 – Social Connections Reliability Test Results

In terms of the Civic Engagement dimension, all the indicators except for Corruption, show a high reliability with a Cronbach Alpha of 0,9:

Reliability Statistics

Cronbach's Alpha	N of Items
.957	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
European Social Survey_Trust in the Legal System	14.3153	6.426	.970	.927
European Social Survey_Trust in the Police	13.1140	9.165	.809	.971
European Social Survey_Trust in the Polititians	15.9740	7.829	.937	.931
European Social Survey_Trust in the Polititcal Parties	16.0147	7.689	.917	.936

Figure 52 – Civic Engagement Reliability Test Results

In the several tests we did to assess the reliability of the dimension Environment, the reliability was always below 0,4 for which we are unable to create a construct for this dimension.

Regarding the dimension Safety we were able to retrieve a Cronbach Alpha of 0,8 for all the indicators under this dimension:

Reliability Statistics

Cronbach's Alpha	N of Items
.876	9

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Homicides	477.0080	3392.533	-.360	.892
OECD_Feeling safe at night_mean	402.0747	2270.354	.916	.830
OECD_Road deaths	473.1460	3503.981	-.726	.901
Numbeo_Crime rate	444.6987	3659.975	-.353	.935
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Men	396.4527	2393.394	.966	.829
OECD_Inequalities_Horizontal inequality Safety: Feeling Safe at night - Women	414.4173	2242.351	.972	.823
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Middle Aged	401.4080	2301.633	.984	.824
OECD_Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Old	410.7173	2205.159	.973	.822
OECD_Inequalities_Horizontal inequality Education Safety: Feeling Safe at night - Secondary	405.1120	2281.114	.983	.823

Figure 53 – Safety Reliability Test Results

The Subjective Well-Being dimension also provided a good reliability of 0,8 for all the indicators in the construct:

Reliability Statistics

Cronbach's Alpha	N of Items
.863	21

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OECD_Life satisfaction_mean	217.5247	1350.613	-.803	.869
OECD_Negative affect balance	210.7727	1033.714	.830	.837
WHO_insufficient physical activity	193.8780	1055.352	.564	.856
European Social Survey_Feel accomplishment from what I do	222.6707	1317.676	.306	.864
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Men	217.5060	1348.789	-.760	.869
OECD_Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Women	217.5393	1352.351	-.817	.869
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Men	212.7073	1086.818	.925	.837
OECD_Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Women	209.3767	994.867	.972	.829
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Young	217.0960	1330.336	-.386	.866
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Middle Aged	217.3887	1341.850	-.721	.868
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Old	217.7560	1361.969	-.829	.871
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Young	215.9940	1268.747	.383	.860
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Middle Aged	210.9140	1120.053	.910	.840
OECD_Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Old	208.3380	887.437	.926	.831

OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Primary	217.8860	1361.973	-.863	.871
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Secondary	217.5260	1345.527	-.662	.868
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Terciary	217.1060	1335.162	-.540	.867
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Primary	207.1387	852.305	.963	.829
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Secondary	211.5453	1113.889	.909	.840
OECD_Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Terciary	214.2167	1182.564	.792	.848
OECD_Inequalities_Vertical inequality Subjective Well-being: Life Satisfaction	222.7060	1303.862	.656	.862

Figure 54 – Subjective Well-Being Reliability Test Results

In summary, the dimensions created were as follows:

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Work Job Quality 1	Long-Term Unemployment Rate	15	.73	13.68	3.1307	3.30177	
	Labour Market Insecurity	15	1.66	14.62	7.5047	4.35008	
	Youth not in Employment, Education or Training	15	5.79	15.32	9.9713	2.80899	
	Long Hours in Paid Work	15	.97	7.70	4.1547	1.95721	
	Work and Job Quality 1 Dimension	15	3.03	11.31	6.19	2.21	0.62
Work and Job Quality 2	Employment Rate	15	62.29	84.69	76.42	5.52	
	Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Men	15	73.60	90.04	81.19	4.18	
	Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Women	15	51.23	82.31	71.66	7.51	
	Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Young	15	13.99	53.71	34.04	10.88	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Work and Job Quality 2 (cont.)	Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Middle Aged	15	68.93	87.51	81.93	4.80	
	Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Old	15	41.07	78.15	59.27	10.72	
	Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Primary	15	38.26	70.05	55.57	9.05	
	Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Secondary	15	60.87	86.61	76.63	6.48	
	Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Tertiary	15	74.15	89.83	85.93	4.05	
	Dimension Work Job Quality 2 – Employment	15	55.17	78.54	69.18	5.99	0,9
Work and Job Quality 3	Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Men	15	.62	10.53	2.9553	2.53257	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Work and job Quality 3 (cont.)	Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Women	15	.75	17.64	3.3627	4.32189	
	Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Men	15	4.11	16.35	9.9640	3.28514	
	Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Women	15	5.72	15.38	9.9880	2.61868	
	Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Primary	15	24.34	73.76	47.9220	15.90432	
	Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Secondary	15	21.35	72.84	41.9467	15.03152	
	Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Tertiary	15	14.75	69.49	34.0073	14.25351	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Work and job Quality 3 (cont.)	Dimension Work Job Quality 3 – Unemployment Inequalities	15	11.45	39.22	21.44	7.56	0.80
Work and job Quality 4	Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Men	15	1.45	10.40	5.9753	2.65977	
	Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Women	15	.39	5.01	2.2307	1.34582	
	Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Middle Aged	15	.96	8.03	4.3680	2.02461	
	Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Old	15	.13	12.56	4.5493	3.46335	
	Dimension Work Job Quality 4 – Long Hours Inequalities	15	.98	7.69	4.2808	2.14300	0,9
Work Environment and Quality - Trust	Engagement with Organization	15	63.20	72.90	68.0400	2.57760	
	Colleagues Trust	15	53.90	88.00	75.3133	9.05601	
	Hierarchy Trust	15	47.00	79.90	64.3800	9.02569	
	Individual Value Perception of Work	15	42.10	80.90	64.9133	9.99027	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Work Environment and Quality – Trust (Cont.)	Dimension Work Environment and Quality 1 - Trust	15	55.08	79.05	68.1617	6.49885	0.8
Work Environment and Quality – Worked Hours and Inequality	Paid Hours Worked	15	32.50	64.70	53.7200	7.99135	
	Paid & Unpaid Hours Worked	15	78.50	90.40	83.5400	3.64766	
	Inequalities in the work environment - Gender pay gap	15	3.10	22.30	12.9133	5.62112	
	Dimension Work Environment and Quality 2 – Worked Hours and Inequality	15	41.47	57.80	50.0578	4.44837	0.58
Housing	Overcrowding rate	15	2.67	34.21	13.0987	9.78177	
	Poor households without access to basic sanitary facilities	15	.00	21.88	4.7380	6.40371	
	Dimension Housing	15	1.51	28.05	8.9183	7.51456	0,79
Work Life Balance	OECD_Satisfaction with time use_mean	15	5.55	7.78	6.9580	.53479	
	Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Men	15	6.00	8.00	7.0000	.53452	
	Inequalities_Horizontal inequality Worklife balance: Satisfaction with time use - Women	15	5.00	8.00	7.0000	.75593	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Work Life Balance (Cont.)	Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Young	15	6.00	8.00	7.0000	.37796	
	Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Middle Aged	15	5.00	7.00	6.2667	.59362	
	Inequalities_Horizontal inequality Age Worklife balance: Satisfaction with time use - Old	15	5.00	8.00	7.2000	.77460	
	Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Primary	15	5.00	8.00	7.0667	.79881	
	Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Secondary	15	6.00	8.00	7.0667	.59362	
	Inequalities_Horizontal inequality Education Worklife balance: Satisfaction with time use - Tertiary	15	6.00	8.00	6.9333	.45774	
	Inequalities_Vertical inequality Worklife balance: Satisfaction with time use	15	2.00	5.00	2.8667	.83381	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Work Life Balance (Cont.)	Dimension Work Life Balance	15	5.46	7.28	6.5358	.42400	0,85
Health	Perceived health_mean	0					
	Inequalities_Horizontal inequality Health: Perceived Health - Men	15	52.00	78.80	68.6933	9.36418	
	Inequalities_Horizontal inequality Health: Perceived Health - Women	15	42.90	74.30	63.0000	10.43216	
	Inequalities_Horizontal inequality Age Health: Perceived Health - Young	15	80.90	97.70	89.2267	5.41736	
	Inequalities_Horizontal inequality Age Health: Perceived Health - Old	15	11.30	65.40	37.5667	17.85536	
	Inequalities_Horizontal inequality Education Health: Perceived Health - Primary	15	34.90	68.70	51.7733	11.45086	
	Inequalities_Horizontal inequality Education Health: Perceived Health - Secondary	15	41.60	85.30	67.3467	11.80568	
	Inequalities_Horizontal inequality Education Health: Perceived Health - Tertiary	15	61.60	89.00	78.7267	7.89814	
	Dimension Health – Perceived Health and Related Inequalities	15	47.20	75.89	65.1317	8.77522	0,91

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Mental Health	Anxiolytic drug consumption	15	3.20	84.80	25.0933	21.33162	
	Antidepressant consumption	15	30.40	131.10	66.9400	28.19685	
	Dimension Mental Health	15	25.15	107.95	46.0167	21.62706	0,66
Knowledge and Skills	Student skills (reading)_mean	15	457.41	523.02	495.4840	19.49791	
	Student skills (maths)_mean	15	451.37	523.41	498.5667	17.00889	
	Student skills (science)_mean	15	451.63	530.11	494.5953	19.76680	
	Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Men	15	451.53	527.64	500.2000	17.33100	
	Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) - Women	15	451.21	519.19	496.9307	17.12136	
	Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Men	15	446.07	527.63	492.1280	19.68168	
	Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) - Women	15	457.36	534.04	497.1147	20.57719	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Knowledge and Skills (Cont.)	Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Secondary	15	442.15	506.66	478.9140	17.84998	
	Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) - Tertiary	15	475.23	547.92	516.0127	18.22240	
	Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Secondary	15	434.82	504.19	476.6487	16.12128	
	Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) - Tertiary	15	469.10	546.42	514.3980	18.44873	
	Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Secondary	15	432.10	520.66	478.0233	20.31903	
	Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) - Tertiary	15	473.23	548.09	517.4860	21.18386	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Knowledge and Skills (Cont.)	Inequalities_Vertical inequality Knowledge and Skills: Student skills (maths)	15	1.50	1.70	1.6067	.07988	
	Inequalities_Vertical inequality Knowledge and Skills: Student skills (science)	15	1.50	1.70	1.6467	.06399	
	Dimension Knowledge and Skills	15	393.95	454.54	430.6504	14.95728	0,97
Social Connections	OECD_Social support_mean	15	78.95	96.57	90.7260	4.65207	
	Satisfaction with personal relationships_mean	15	7.08	8.56	8.1327	.38360	
	Inequalities_Horizontal inequality Social Connections: Social Support - Men	15	80.12	95.29	90.0827	4.02794	
	Inequalities_Horizontal inequality Social Connections: Social Support - Women	15	81.23	95.60	90.8093	3.87716	
	Inequalities_Horizontal inequality Social Connections: Satisfaction with personal Relationships - Men	15	7.07	8.48	8.0633	.36891	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Social Connections (Cont.)	Inequalities_ Social Connections: Satisfaction with personal Relationships - Women	15	7.09	8.67	8.1947	.40495	
	Inequalities_ Social Connections: Social Support - Middle Aged	15	82.40	96.04	91.0180	3.77003	
	Inequalities_ Social Connections: Social Support - Old	15	74.15	93.70	87.5533	5.12430	
	Inequalities_ Social Connections: Satisfaction with personal Relationships - Young	15	7.40	8.88	8.3147	.36483	
	Inequalities_ Social Connections: Satisfaction with personal Relationships - Middle Aged	15	7.05	8.47	8.0513	.33884	
	Inequalities_ Social Connections: Satisfaction with personal Relationships - Old	15	7.01	8.78	8.1327	.46383	
	Inequalities_ Education Social Connections: Social Support - Secondary	15	83.08	95.71	91.1780	3.51696	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Social Connections (Cont.)	Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Primary	15	6.96	8.72	8.0127	.45336	
	Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Secondary	15	7.08	8.66	8.1447	.41153	
	Inequalities_Vertical inequality Social Connections: Satisfaction with personal relationships	15	1.50	2.20	1.8133	.19223	
	Inequalities_Horizontal inequality Education Social Connections: Satisfaction with personal relationships - Tertiary	15	7.24	8.64	8.2280	.33238	
	Dimension Social Connections	15	34.13	40.46	38.5285	1.67563	0,90
Civic Engagement	Social Survey_Trust in the Legal System	15	3.92	7.68	5.4907	1.18126	
	Social Survey_Trust in the Police	15	5.16	8.12	6.6920	.78547	
	Social Survey_Trust in the Polititians	15	2.55	5.37	3.8320	.93810	
	Social Survey_Trust in the Polititcal Parties	15	2.50	5.30	3.7913	.97926	
	Dimension – Civic Engagement	15	3.86	6.55	4.9515	.92291	0,95

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Safety	Homicides	15	.48	3.70	1.1213	.84001	
	Feeling safe at night_mean	15	57.49	93.01	76.0547	11.05678	
	Road deaths	15	2.04	8.10	4.9833	1.73241	
	Crime rate	15	21.79	49.20	33.4307	8.92218	
	Inequalities_Horizontal inequality Safety: Feeling Safe at night - Men	15	67.51	96.23	81.6767	9.29019	
	Inequalities_Horizontal inequality Safety: Feeling Safe at night - Women	15	47.24	84.03	63.7120	10.84059	
	Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Middle Aged	15	61.10	92.49	76.7213	10.10608	
	Inequalities_Horizontal inequality Age Safety: Feeling Safe at night - Old	15	51.72	88.95	67.4120	11.23319	
	Inequalities_Horizontal inequality Education Safety: Feeling Safe at night - Secondary	15	58.87	90.03	73.0173	10.33513	
	Dimension Safety	15	43.95	64.53	53.1255	6.43869	0,87
Subjective Well-Being	Life satisfaction_mean	15	6.44	8.12	7.3547	.49595	
	Negative affect balance	15	7.92	25.10	14.1067	4.93738	
	Insufficient physical activity	15	16.56	43.40	31.0013	6.21171	
	Feel accomplishment from what I do	15	1.92	2.44	2.2087	.17427	
	Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Men	15	6.50	8.10	7.3733	.49203	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Subjective Well-Being (Cont.)	Inequalities_Horizontal inequality Subjective Well-being: Life Satisfaction - Women	15	6.40	8.20	7.3400	.51658	
	Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Men	15	6.79	19.54	12.1720	3.63201	
	Inequalities_Horizontal inequality Subjective Well-being: Negative Affect Balance - Women	15	9.08	24.52	15.5027	4.92994	
	Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Young	15	6.96	8.20	7.7833	.31414	
	Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Middle Aged	15	6.57	8.11	7.4907	.38659	
	Inequalities_Horizontal inequality Age Subjective Well-being: Life Satisfaction - Old	15	6.20	8.12	7.1233	.66770	
	Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Young	15	6.70	13.80	8.8853	1.81583	
	Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Middle Aged	15	10.11	20.39	13.9653	3.14528	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Subjective Well-Being (Cont.)	Inequalities_Horizontal inequality Age Subjective Well-being: Negative affect balance - Old	15	6.63	28.58	16.5413	6.98467	
	Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Primary	15	6.10	8.00	6.9933	.64083	
	Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Secondary	15	6.50	8.10	7.3533	.49838	
	Inequalities_Horizontal inequality Education Subjective Well-being: Life Satisfaction - Tertiary	15	6.90	8.30	7.7733	.34737	
	Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Primary	15	7.26	32.17	17.7407	7.37839	
	Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Secondary	15	8.65	18.76	13.3340	3.24946	
	Inequalities_Horizontal inequality Education Subjective Well-being: Negative Affect Balance - Terciary	15	7.20	15.69	10.6627	2.44334	

(Cont.)

Dim.	Indicators	N	Min	Max	Mean	Standard Deviation	Cronbach Alpha
Subjective Well-Being (Cont.)	Inequalities_Vertical inequality Subjective Well-being: Life Satisfaction	15	1.50	2.90	2.1733	.37123	
	Dimension – Subjective Well-Being	15	8.17	13.64	10.7085	1.73112	0,86

Table 45 – Created Dimensions Summary

7.1 Streamlining Dashboard Dimensions

Dimension Work and Job Quality 1:

Table 46 – Work and Job Quality 1 Component Matrix

Component Matrix[a]		
	Component	
	1	2
OECD_Youth not in employment, education or training	.919	.003
OECD_Long-term unemployment rate	.908	.022
OECD_Long hours in paid work	.440	.789
OECD_Labour market insecurity	.498	-.742
Explained Variance	52.79	29.37
KMO	0,595; p<0,05	
Extraction Method: Principal Component Analysis. a. 2 components extracted.		

The PCA analysis on the dimension Work and Job Quality 1 revealed that the combination of the indicators Long-Term Unemployment Rate and Labour Market Insecurity explain 82% of the dimension.

Dimension Work Job Quality 2:

Table 47 – Work and Job Quality 2 Component Matrix

Component Matrix[a]		
	Component	
	1	2
OECD_Employment rate	.991	-.095
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Women	.977	-.010
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Secondary	.937	-.009
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Middle Aged	.885	-.415
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Old	.878	.361
OECD_Inequalities_Horizontal inequality Work & Job Quality: Employment Rate - Men	.859	-.217
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Terciary	.841	-.293
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Employment Rate - Young	.782	.239
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Employment Rate - Primary	.565	.722
Explained Variance	56,07%	30,24%
KMO	0,672 ; p<0,001	
Extraction Method: Principal Component Analysis. a. 2 components extracted.		

The PCA analysis on the dimension Work and Job Quality 2 revealed that the combination of the indicators Employment Rate and Employment Rate for Women related Inequality explain 86% of the dimension.

Dimension Work Job Quality 3:

Table 48 – Work and Job Quality 3 Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Men	.964
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Tertiary	.935
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long-term unemployment rate - Women	.913
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Secondary	.893
OECD_Inequalities_Horizontal inequality Education Work & Job Quality: Long Term Unemployment Rate - Primary	.840
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Women	.811
OECD_Inequalities_Horizontal inequality Work & Job Quality: Youth not in employment, education or training - Men	.750
Explained Variance	76,57%
KMO	0,541; p<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension Work and Job Quality 3 revealed that the indicator Inequality – Long-Term Unemployment Rate Men explains 76% of the dimension.

The PCA results for the dimension Work Job Quality 4 are:

Table 49 – Work and Job Quality 4 Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Middle Aged	.970
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Women	.960
OECD_Inequalities_Horizontal inequality Work & Job Quality: Long Hours in Paid Work - Men	.951
OECD_Inequalities_Horizontal inequality Age Work & Job Quality: Long Hours in Paid Work - Old	.786
Explained Variance	84,63%
KMO	0,540; *p*<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension Work and Job Quality 4 revealed that the indicator Inequality – Long Hours in Paid Work – Middle Aged explains 84% of the dimension.

Regarding the dimension Work Environment and Conditions 1 the results for the PCA were:

Table 50 – Work Environment and Conditions Component Matrix

Component Matrix[a]	
	Component
	1
Eurofund_Colleagues Trust	.926
Eurofund_Hierarchy Trust	.811
Eurofund_Engagement with Organization	.810
Eurofund_Individual Value Perception of Work	.797
Explained Variance	70,14%
KMO	KMO=0,627; *p*<0,001
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

The PCA analysis on the dimension Work Environment and Conditions 1 shows that the indicator Colleagues Trust explains 70% of the dimension.

Regarding the dimension Work Environment and Conditions 2 the results for the PCA are depicted as follows:

Table 51 – Work Environment and Conditions 2 Component Matrix

Component Matrix[a]	
	Component
	1
Eurofund_Paid Hours Worked	.812
Eurofund_Paid & Unpaid Hours Worked	.782
Statista_Inequalities in the work environment - Gender pay gap	.679
Explained Variance	57,75%
KMO	0,623, *p*<0,05
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension Work Environment and Conditions 2 shows that the indicator Paid Hours Worked explains 57% of the dimension.

For the dimension Knowledge and Skills 1, regarding the Reading Skills, shows the following results for the PCA analysis:

Table 52 – Knowledge and Skills 1 Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) – Secondary	.971
OECD_Student skills (reading)_mean	.950
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (reading) – Tertiary	.946
Explained Variance	91,31%
KMO	0,75; *p*<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension Knowledge and Skills 1, regarding Reading, shows that the Student Skills (reading) - Secondary Inequality related indicator explains 91% of the dimension.

For the Maths Skills under the Knowledge and Skills dimension, the PCA results are:

Table 53 – Knowledge and Skills 2 Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Student skills (maths)_mean	.989
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) – Women	.978
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (math) – Men	.975
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) – Secondary	.949
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (maths) – Tertiary	.898
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (maths)	-.561

(Cont.)

Component Matrix[a]	
	Component
	1
Explained Variance	81,82%
KMO	0,694; p<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension Knowledge and Skills 2, regarding Maths, shows that the mean of the Student Skills (maths) indicator explains 81% of the dimension.

For the Science Skills under the Knowledge and Skills dimension, the PCA results are:

Table 54 – Knowledge and Skills 3 Component Matrix

Component Matrix[a]	
	Component
	1
OECD_Student skills (science)_mean	.985
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) – Men	.977
OECD_Inequalities_Horizontal inequality Knowledge and Skills: Student skills (science) – Women	.959
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) – Secondary	.957
OECD_Inequalities_Horizontal inequality Education Knowledge and Skills: Student skills (science) – Tertiary	.931
OECD_Inequalities_Vertical inequality Knowledge and Skills: Student skills (science)	-.690
Explained Variance	85,04%
KMO	0,693; p<0,001
Extraction Method: Principal Component Analysis. a. 1 components extracted.	

The PCA analysis on the dimension Knowledge and Skills 3, regarding Science, shows that the mean of the Student skills (science) indicator explains 85% of the dimension.

8. Correlation Analysis

In order to perform the multiple Linear Regression analysis we did an exploratory correlation analysis between the independent indicators and the dependent indicator Life Satisfaction – Mean.

The results are depicted in the table below:

Table 55 – Correlations between Dashboard Indicators and Life Satisfaction

Correlations		
		ACP_Subjective WellBeing_Life Satisfaction Mean
ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men	Pearson Correlation	-.747**
	Sig. (2-tailed)	.001
	N	15
ACP_WorkJob Quality_Full_LongTerm Unemployment Rate	Pearson Correlation	.137
	Sig. (2-tailed)	.627
	N	15
ACP_WorkingConditions_Full_ColleaguesTrust	Pearson Correlation	.026
	Sig. (2-tailed)	.926
	N	15
ACP_Housing_Poor Households without access to Sanitary Facilities	Pearson Correlation	-.203
	Sig. (2-tailed)	.469
	N	15
ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women	Pearson Correlation	.759**
	Sig. (2-tailed)	.001
	N	15
Correlations (Cont.)		

		ACP_Subjective WellBeing_Life Satisfaction Mean
ACP_Health_Inequality Perceived Health - Men	Pearson Correlation	.258
	Sig. (2-tailed)	.354
	N	15
ACP_Health_Inequality Perceived Health – Women	Pearson Correlation	-.193
	Sig. (2-tailed)	.491
	N	15
ACP_MentalHealth_Antidepressants Consumption	Pearson Correlation	.379
	Sig. (2-tailed)	.163
	N	15
ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	Pearson Correlation	.627*
	Sig. (2-tailed)	.012
	N	15
ACP_Social Connections_Social Support	Pearson Correlation	.702**
	Sig. (2-tailed)	.004
	N	15
ACP_Social Connections_Personal Relationships	Pearson Correlation	.808**
	Sig. (2-tailed)	.000
	N	15
ACP_Civic Engagement_Trust Legal System	Pearson Correlation	-.236
	Sig. (2-tailed)	.396
	N	15
ACP_Safety_Inequality Feeling Safe Night – Secondary	Pearson Correlation	.679**
	Sig. (2-tailed)	.005
	N	15
OECD_Household income	Pearson Correlation	.524*
	Sig. (2-tailed)	.045
	N	15

Correlations (Cont.)		
		ACP_Subjective WellBeing_Life Satisfaction Mean
OECD_Relative Income Poverty	Pearson Correlation	.111
	Sig. (2-tailed)	.695
	N	15
OECD_Difficulty Making Ends Meet	Pearson Correlation	-.060
	Sig. (2-tailed)	.831
	N	15
OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	Pearson Correlation	-.591*
	Sig. (2-tailed)	.020
	N	15
Leeds-PB_CO2 Emissions Variance to threshold	Pearson Correlation	-.238
	Sig. (2-tailed)	.393
	N	15
Leeds-PB_Phosphorus Variance to threshold	Pearson Correlation	-.122
	Sig. (2-tailed)	.666
	N	15
Leeds-PB_Nitrogen Variance to threshold	Pearson Correlation	-.295
	Sig. (2-tailed)	.286
	N	15
Leeds-PB_Blue Water Variance to threshold	Pearson Correlation	.556*
	Sig. (2-tailed)	.031
	N	15
Leeds-PB_eHANPP Variance to threshold	Pearson Correlation	-.191
	Sig. (2-tailed)	.495
	N	15
Leeds-PB_Ecological Footprint Variance to threshold	Pearson Correlation	-.041
	Sig. (2-tailed)	.884
	N	15

Correlations (Cont.)		
		ACP_Subjective WellBeing_Life Satisfaction Mean
Leeds-PB_Material Footprint Variance to threshold	Pearson Correlation	-.101
	Sig. (2-tailed)	.721
	N	15
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).		

As all the independent indicators are correlated to Life Satisfaction – Mean we then proceeded to perform the Multiple Linear Regression Analysis.

The results are as follows for the 2nd Level Dashboard Independent Indicators:

Table 56 – Multiple Linear Regression Model Summary Table

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.956[a]	.914	.700	.54746741	1.529
a. Predictors: (Constant), ACP_Safety_Inequality Feeling Safe Night - Secondary, Leeds-PB_Blue Water Variance to threshold, Leeds-PB_CO2 Emissions Variance to threshold, ACP_Knowledge and Skills_Full_Knowledge and Skills - Science, Leeds-PB_Nitrogen Variance to threshold, OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio, ACP_Social Connections_Social Support, ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men, ACP_Social Connections_Personal Relationships, ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women					
b. Dependent Indicator: ACP_Subjective WellBeing_LifeSatisfaction - Life Satisfaction Mean					

Table 57 – Multiple Linear Regression ANOVA Results Table

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.801	10	1.280	4.271	.087[b]
	Residual	1.199	4	.300		
	Total	14.000	14			
a. Dependent Indicator: ACP_Subjective WellBeing_LifeSatisfaction - Life Satisfaction Mean						
b. Predictors: (Constant), ACP_Safety_Inequality Feeling Safe Night - Secondary, Leeds-PB_Blue Water Variance to threshold, Leeds-PB_CO2 Emissions Variance to threshold, ACP_Knowledge and Skills_Full_Knowledge and Skills - Science, Leeds-PB_Nitrogen Variance to threshold, OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio, ACP_Social Connections_Social Support, ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men, ACP_Social Connections_Personal Relationships, ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women						

Table 58 – Multiple Linear Regression Coefficients Table

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.900	2.052		1.900	.130		
	OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	-.784	.368	-.727	-2.130	.100	.184	5.449
	Leeds-PB_Blue Water Variance to threshold	-.001	.002	-.278	-.682	.533	.129	7.732
	ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	.414	.263	.414	1.577	.190	.311	3.219
	ACP_Social Connections_Social Support	-.866	.472	-.866	-1.835	.140	.096	10.396
	ACP_Social Connections_Personal Relationships	.544	.405	.544	1.344	.250	.131	7.653
	Leeds-PB_CO2 Emissions Variance to threshold	.061	.092	.172	.661	.545	.318	3.149
	Leeds-PB_Nitrogen Variance to threshold	-.006	.013	-.117	-.450	.676	.319	3.138
	ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men	.413	.394	.413	1.046	.355	.138	7.269
	ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women	1.049	.570	1.049	1.841	.139	.066	15.181
	ACP_Safety_Inequality Feeling Safe Night - Secondary	.096	.388	.096	.248	.816	.142	7.033
a. Dependent Indicator: ACP_Subjective WellBeing_LifeSatisfaction - Life Satisfaction Mean								

The results for the Positive Impact 2nd Level Streamlined Dashboard Independent Indicators are as follows:

Table 59 – Positive Impact Indicators Correlations with the Life Satisfaction – Mean Indicator Table

Correlations		
		ACP_Subjective WellBeing_LifeSatisfaction - Life Satisfaction Mean
OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	Pearson Correlation	-.591*
	Sig. (2-tailed)	.020
	N	15
Leeds-PB_Blue Water Variance to threshold	Pearson Correlation	.556*
	Sig. (2-tailed)	.031
	N	15
ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	Pearson Correlation	.627*
	Sig. (2-tailed)	.012
	N	15
ACP_Social Connections_Social Support	Pearson Correlation	.702**
	Sig. (2-tailed)	.004
	N	15
ACP_Social Connections_Personal Relationships	Pearson Correlation	.808**
	Sig. (2-tailed)	.000
	N	15
*. Correlation is significant at the 0.05 level (2-tailed).		
**. Correlation is significant at the 0.01 level (2-tailed).		

As all the independent indicators are correlated to Life Satisfaction – Mean we then proceeded to perform the Multiple Linear Regression Analysis.

The results are as follows:

Table 60 – Positive Impact Indicators Multiple Linear Regression Model Summary Table

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.901[a]	.811	.706	.54177614	2.499
a. Predictors: (Constant), Leeds-PB_Blue Water Variance to threshold, ACP_Knowledge and Skills_Full_Knowledge and Skills - Science, OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio, ACP_Social Connections_Personal Relationships, ACP_Social Connections_Social Support					
b. Dependent Indicator: ACP_Subjective WellBeing_LifeSatisfaction - Life Satisfaction Mean					

Table 61 – Positive Impact Indicators Multiple Linear Regression ANOVA Results Table

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.358	5	2.272	7.739	.004[b]
	Residual	2.642	9	.294		
	Total	14.000	14			
a. Dependent Indicator: ACP_Subjective WellBeing_LifeSatisfaction - Life Satisfaction Mean						
b. Predictors: (Constant), Leeds-PB_Blue Water Variance to threshold, ACP_Knowledge and Skills_Full_Knowledge and Skills - Science, OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio, ACP_Social Connections_Personal Relationships, ACP_Social Connections_Social Support						

Table 62 – Positive Impact Indicators Multiple Linear Regression Coefficients Table

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.297	.935		1.388	.199		
	ACP_Social Connections_Social Support	-.022	.245	-.022	-.090	.931	.350	2.861
	ACP_Social Connections_Personal Relationships	.477	.244	.477	1.956	.082	.352	2.842
	ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	.320	.180	.320	1.776	.109	.645	1.551
	OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	-.311	.196	-.288	-1.588	.147	.637	1.571
	Leeds-PB_Blue Water Variance to threshold	.000	.001	.126	.712	.494	.673	1.487
a. Dependent Indicator: ACP_Subjective WellBeing_LifeSatisfaction - Life Satisfaction Mean								

8.1 Correlation Analysis – UN's WHR Life Satisfaction Results

Table 63 – Correlations Table Using WHR Life Satisfaction indicator

Correlations

		UN's WHR 2019 Happiness Score	ACP_Social Connections_Social Support	ACP_Social Connections_Personal Relationships	ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	Leeds-PB_Blue Water Variance to threshold	ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men	ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women	ACP_Safety_Inequality Feeling Safe Night - Secondary	Leeds-PB_CO2 Emissions Variance to threshold	Leeds-PB_Nitrogen Variance to threshold
Pearson Correlation	UN's WHR 2019 Happiness Score	1.000	.317	.212	.341	.034	.044	-.240	.143	.058	.004	-.010
	ACP_Social Connections_Social Support	.317	1.000	.781	.511	-.451	.453	-.591	.861	.814	-.307	-.371

	ACP_Social Connections_Personal Relationships	.212	.781	1.000	.511	-.460	.408	-.749	.688	.779	-.075	-.275
	ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	.341	.511	.511	1.000	-.107	.344	-.657	.591	.459	-.078	-.135
	OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	.034	-.451	-.460	-.107	1.000	-.471	.530	-.328	-.396	.442	.019
	Leeds-PB_Blue Water Variance to threshold	.044	.453	.408	.344	-.471	1.000	-.702	.717	.147	-.125	-.551
	ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men	-.240	-.591	-.749	-.657	.530	-.702	1.000	-.697	-.465	.094	.345
	ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women	.143	.861	.688	.591	-.328	.717	-.697	1.000	.631	-.263	-.581
	ACP_Safety_Inequality Feeling Safe Night - Secondary	.058	.814	.779	.459	-.396	.147	-.465	.631	1.000	-.412	-.232

	Leeds-PB_CO2 Emissions Variance to threshold	.004	-.307	-.075	-.078	.442	-.125	.094	-.263	-.412	1.000	.329
	Leeds-PB_Nitrogen Variance to threshold	-.010	-.371	-.275	-.135	.019	-.551	.345	-.581	-.232	.329	1.000
Sig. (1-tailed)	UN's WHR 2019 Happiness Score	.	.125	.224	.106	.453	.438	.195	.305	.419	.494	.486
	ACP_Social Connections_Social Support	.125	.	.000	.026	.046	.045	.010	.000	.000	.133	.087
	ACP_Social Connections_Personal Relationships	.224	.000	.	.026	.042	.066	.001	.002	.000	.395	.161
	ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	.106	.026	.026	.	.353	.105	.004	.010	.043	.391	.316
	OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	.453	.046	.042	.353	.	.038	.021	.116	.072	.050	.473
	Leeds-PB_Blue Water Variance to threshold	.438	.045	.066	.105	.038	.	.002	.001	.301	.329	.017

	ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men	.195	.010	.001	.004	.021	.002	.	.002	.040	.370	.104
	ACP_WorkLifeBalance _Inequalities Satisfaction with Time Use - Women	.305	.000	.002	.010	.116	.001	.002	.	.006	.172	.012
	ACP_Safety_Inequality Feeling Safe Night - Secondary	.419	.000	.000	.043	.072	.301	.040	.006	.	.063	.202
	Leeds-PB_CO2 Emissions Variance to threshold	.494	.133	.395	.391	.050	.329	.370	.172	.063	.	.116
	Leeds-PB_Nitrogen Variance to threshold	.486	.087	.161	.316	.473	.017	.104	.012	.202	.116	.
N	UN's WHR 2019 Happiness Score	15	15	15	15	15	15	15	15	15	15	15
	ACP_Social Connections_Social Support	15	15	15	15	15	15	15	15	15	15	15
	ACP_Social Connections_Personal Relationships	15	15	15	15	15	15	15	15	15	15	15

	ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	15	15	15	15	15	15	15	15	15	15	15
	OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	15	15	15	15	15	15	15	15	15	15	15
	Leeds-PB_Blue Water Variance to threshold	15	15	15	15	15	15	15	15	15	15	15
	ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men	15	15	15	15	15	15	15	15	15	15	15
	ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women	15	15	15	15	15	15	15	15	15	15	15
	ACP_Safety_Inequality Feeling Safe Night - Secondary	15	15	15	15	15	15	15	15	15	15	15
	Leeds-PB_CO2 Emissions Variance to threshold	15	15	15	15	15	15	15	15	15	15	15
	Leeds-PB_Nitrogen Variance to threshold	15	15	15	15	15	15	15	15	15	15	15

Table 64 – Summary Model Table Using WHR Life Satisfaction indicator

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.829[a]	.687	-.095	.72996	1.448

a. Predictors: (Constant), Leeds-PB_Nitrogen Variance to threshold, OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio, ACP_Knowledge and Skills_Full_Knowledge and Skills - Science, Leeds-PB_CO2 Emissions Variance to threshold, ACP_Safety_Inequality Feeling Safe Night - Secondary, Leeds-PB_Blue Water Variance to threshold, ACP_Social Connections_Social Support, ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men, ACP_Social Connections_Personal Relationships, ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women

b. Dependent Indicator: UN's WHR 2019 Happiness Score

Table 65 – ANOVA Table Using WHR Life Satisfaction indicator

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.678	10	.468	.878	.607[b]
	Residual	2.131	4	.533		
	Total	6.810	14			

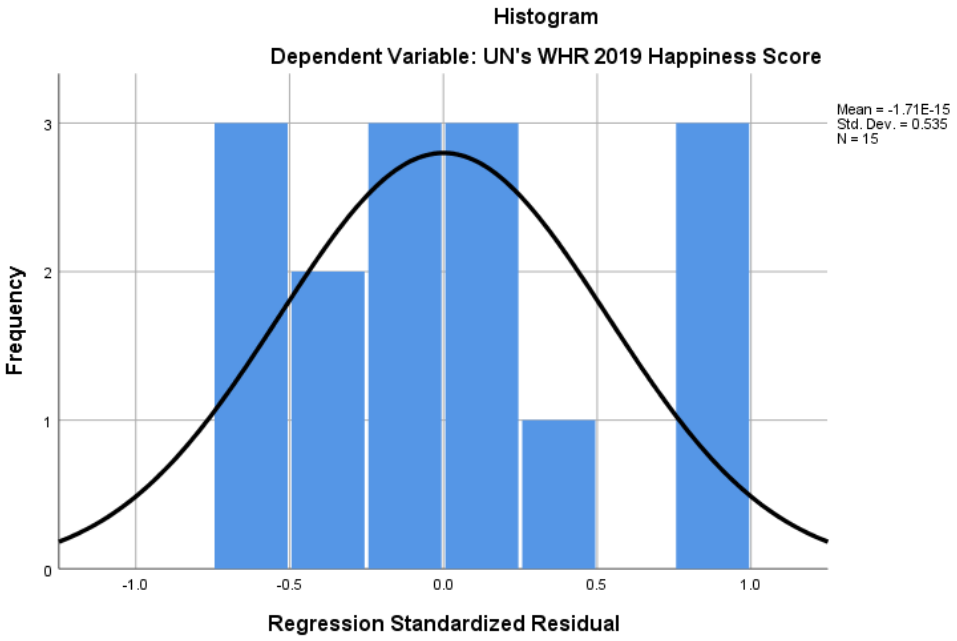
a. Dependent Indicator: UN's WHR 2019 Happiness Score

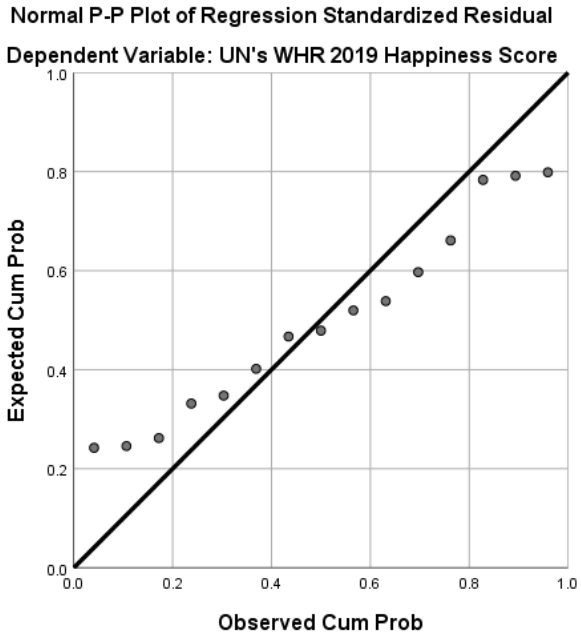
b. Predictors: (Constant), Leeds-PB_Nitrogen Variance to threshold, OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio, ACP_Knowledge and Skills_Full_Knowledge and Skills - Science, Leeds-PB_CO2 Emissions Variance to threshold, ACP_Safety_Inequality Feeling Safe Night - Secondary, Leeds-PB_Blue Water Variance to threshold, ACP_Social Connections_Social Support, ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men, ACP_Social Connections_Personal Relationships, ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women

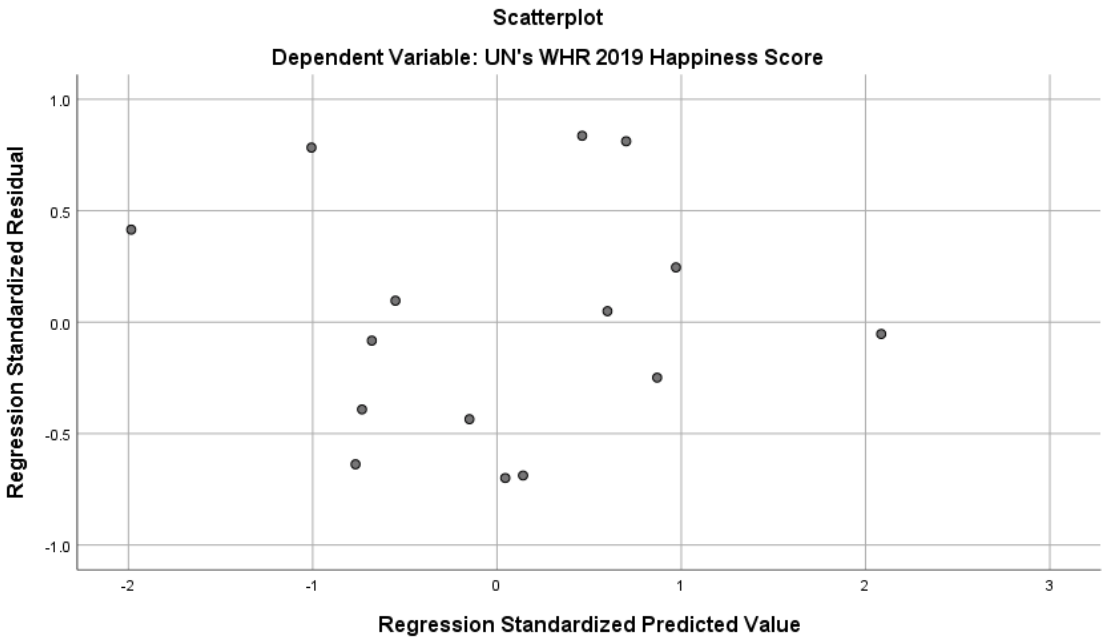
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2.714	2.736		.992	.377		
	ACP_Social Connections_Social Support	1.514	.629	2.171	2.407	.074	.096	10.396
	ACP_Social Connections_Personal Relationships	.258	.540	.370	.478	.657	.131	7.653
	ACP_Knowledge and Skills_Full_Knowledge and Skills - Science	.159	.350	.228	.454	.674	.311	3.219
	OECD_Inequalities_Vertical inequality Income and Wealth: S80/S20 income share ratio	.625	.491	.832	1.273	.272	.184	5.449
	Leeds-PB_Blue Water Variance to threshold	.001	.002	.302	.389	.717	.129	7.732
	ACP_WorkJob Quality_Full_LongTerm Unemployment Rate - Men	-.355	.526	-.510	-.676	.536	.138	7.269
	ACP_WorkLifeBalance_Inequalities Satisfaction with Time Use - Women	-1.220	.760	-1.749	-1.605	.184	.066	15.181
	ACP_Safety_Inequality Feeling Safe Night - Secondary	-.795	.517	-1.140	-1.537	.199	.142	7.033
	Leeds-PB_CO2 Emissions Variance to threshold	-.135	.123	-.546	-1.101	.333	.318	3.149
	Leeds-PB_Nitrogen Variance to threshold	.005	.017	.152	.306	.775	.319	3.138

a. Dependent Indicator: UN's WHR 2019 Happiness Score


Histogram
Dependent Variable: UN's WHR 2019 Happiness Score
Mean = -1.71E-15
Std. Dev. = 0.535
N = 15
Frequency
3
2
1
0
-1.0
-0.5
0.0
0.5
1.0
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: UN's WHR 2019 Happiness Score
Expected Cum Prob
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Observed Cum Prob



Results for the positive influence indicators only.

9. Multiple Linear Regression Analysis and Plots

As we were able to write the well-being equation, both for all the indicators in the 2nd level streamlined dashboard as for the positive impact indicators only, we have operationalized it for every country in the DB.

The results are depicted in the following table:

Table 66 – Multiple Linear Regression Results Operationalization: All Countries

	Positive Influence								Negative Influence								Overall Index Value	Positive Impact Index Value
Dimension	Social Connections				Knowledge and Skills		Income & Wealth		Environment		Work Life Balance		Work and Job Quality		Safety		Environment			
Variables /Countries	Social Support		Personal Relationships		Knowledge and Skills - Science		Vertical inequality Income and Wealth: S80/S20 income share ratio		Blue Water - Variance to threshold		Inequalities Satisfaction with Time Use - Women		LongTerm Unemployment Rate - Men		Inequality Feeling Safe Night - Secondary		Nitrogen - Variance to threshold		CO2 Emissions - Variance to threshold			
Beta Standardized Coefficients	-0.866		0.544		0.414		-0.727		-0.278		1.049		0.413		0.096		-0.12		0.172			
Belgium		0.23005		-0.46373		0.05174		3.8		205		0.04613		-0.10835		-0.76414		-38.3		-9.1	-57.33648768	-60.18267206
Denmark		-0.16582		0.39482		0.06254		3.5		360		-0.11707		-1.36819		-0.43817		-54.2		-9.4	-98.24555946	-102.2402262
Estonia		1.2508		0.12047		0.21452		3.8		322		1.16693		-0.4191		1.11388		-64.4		-10.2	-86.26909209	-93.20744584
Finland		-0.05916		-0.75289		1.64615		5.2		128		-0.09934		0.00559		-0.34398		-62.5		-12.6	-34.03085457	-39.0412335
France		1.08721		0.80063		1.02028		3.9		363		1.71672		-0.43552		1.00651		-87.4		-13.1	-94.14269074	-103.8328852
Germany		0.34105		-0.43375		-0.21708		4.6		235		-0.10599		0.31874		-0.30775		-78.5		-7.1	-61.34116831	-69.29538042
Hungary		-2.51631		-2.76903		-2.37985		5		-310		-2.61347		2.70375		-1.48258		-42.7		-11.7	83.44880528	82.23251424
Lithuania		-1.17839		-0.95888		-0.47254		6.6		371		0.21421		0.19486		-1.57744		-80.9		-5.1	-98.89112731	-107.6329765
Poland		1.06161		1.01832		0.10183		4		267		0.95921		-0.88781		1.70512		-99.1		-15.6	-67.74249328	-77.45723056
Portugal		-0.76013		-0.00605		1.13693		4.3		412		-0.11707		-0.47373		-0.50075		-65.4		-7.7	-110.5755585	-116.5364296
Slovak Republic		-0.85371		0.33703		0.10257		5.1		-401		-1.28658		0.1401		0.02053		-39.4		-6.1	111.0062309	108.7354212
Slovenia		-0.06049		0.18875		-1.60409		3.5		372		-0.1769		0.40884		-0.78078		-71.7		-10.5	-99.97830098	-106.4695289
Spain		0.52909		1.17109		0.56107		3.6		315		0.26269		-0.63434		1.32021		-36.4		-9	-86.92491645	-89.776036
Sweden		0.63907		0.3953		-0.24625		5.9		-200		-0.1215		1.40569		0.63707		-50.3		-7.5	55.97971627	50.87036108
Switzerland		0.45513		0.95792		0.02219		4.1		366		0.27201		-0.85053		0.39226		-86.2		-8.6	-96.01462088	-104.5925474

If we rank the results we can observe the following distribution, considering all the indicators of the 2nd level streamlined dashboard:

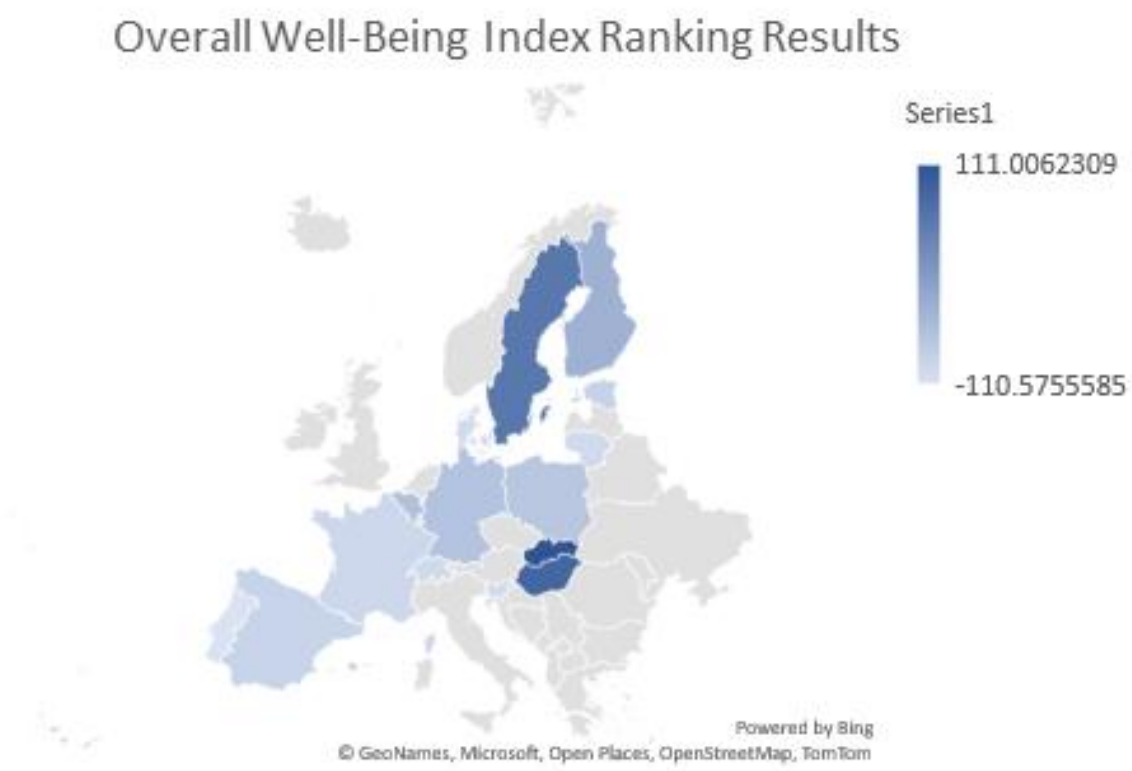


Figure 55 –Well-Being Index Ranking Results Map Visualization, all the indicators from the 2nd level dashboard

We zoomed in on the ranking results and operationalized the ranking for the positive impact indicators only. The results are presented next:

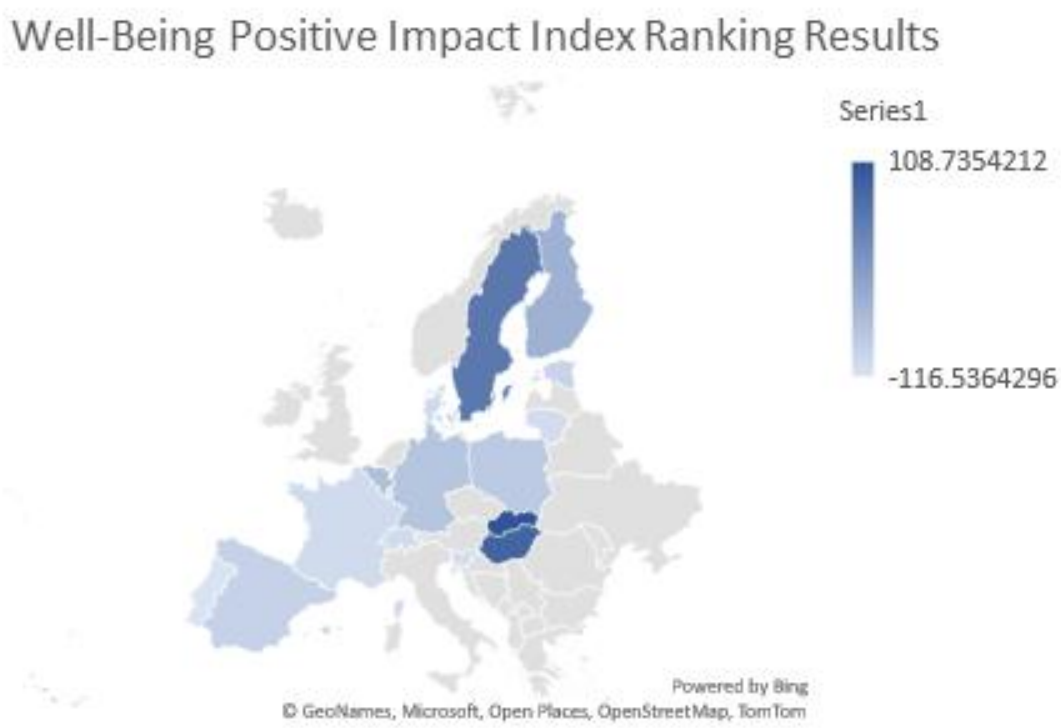


Figure 56 –Well-Being Index Positive Impact Indicators Ranking Results, Map Visualization, indicators from the 2nd level streamlined dashboard

2nd level streamlined dashboard Multiple Linear Regression Analysis Plots

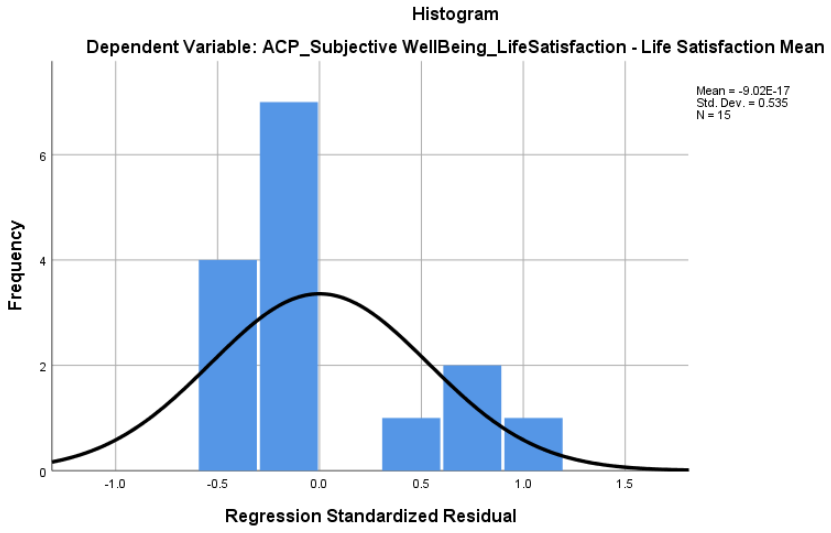


Figure 57 – Regression Standardized Residual Histogram

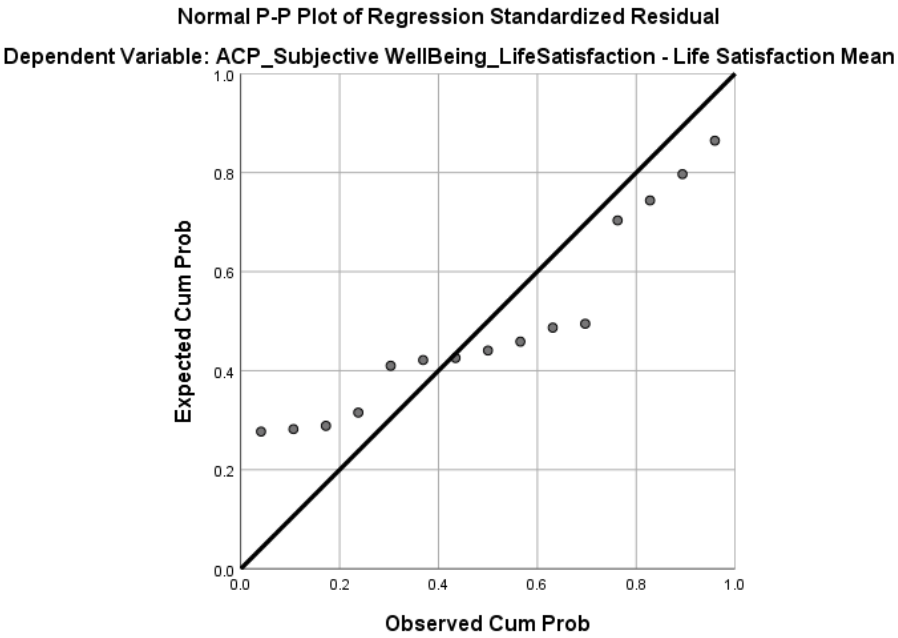


Figure 58 – P-Plot of Regression Standardized Residual Graph

Positive Impact 2nd level dashboard Multiple Linear Regression Analysis Plots

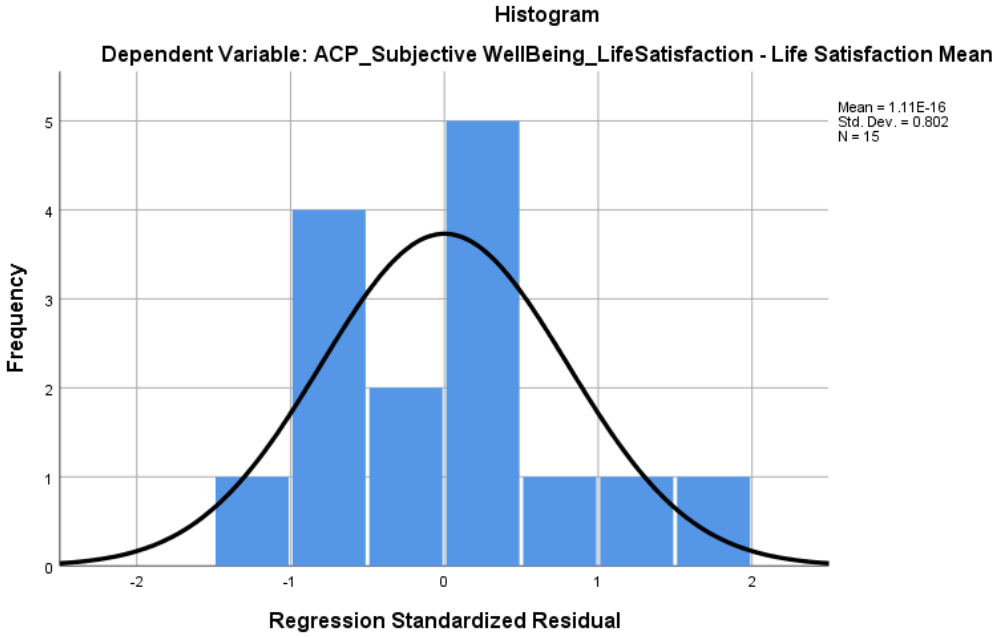


Figure 59 – Positive Impact Indicators Regression Standardized Residual Histogram

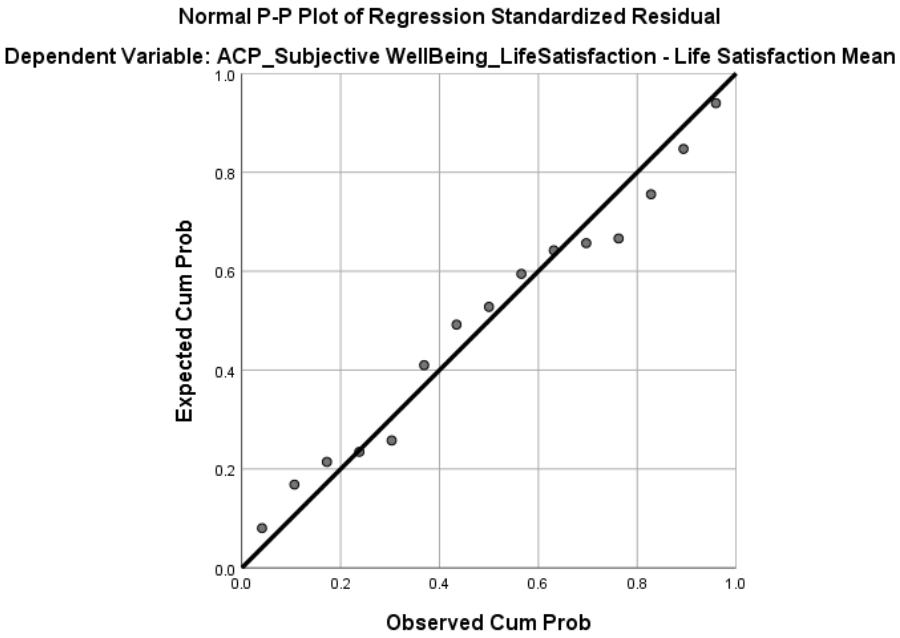


Figure 60 – P-Plot of Positive Impact Indicators Regression Standardized Residual Graph

Annexes

Annex 1: Multi-Country Well-Being Dashboards – Detailed Comparison Table

Table 67 – Well-Being Dashboards: Dimensions[48] and Indicators Comparison Table

Multi-Country Dashboards

Commission on the Measurement of Economic Performance and Social Progress [(1)]	How's Life[(2)]	Sustainable Development Goals (SDGs)[(3)]	Subjective Well-Being[(4)]	National Income Satellite Accounts[(5)]	Calvert-Henderson Quality of Life Indicators[(6)]	Millennium Development Goals and Indicators[(7)]	Comprehensive Wealth[(8)]	Europe 2020 (Eurostat)[(9)]
Income Average measures of income Average measures of consumption Average measures of wealth	**Income and Wealth** Household income Household wealth Income and wealth inequalities: gaps between population groups	**SDG 1: No Poverty**			**Income**	**1: Eradicate extreme poverty and hunger** Population below $1.25 (PPP) per day Poverty gap ratio Share of poorest quintile in national consumption Growth rate of GDPpp employed Employment-to-population ratio Employed people living below $1.25 (PPP) Own-account and contributing family workers in total employment		
Health	**Health**	**SDG 2: Zero Hunger** **SDG 3: Good Health and Well-Being**		**Health Accounts**	**Health**	**Eradicate extreme poverty and hunger** **Reduce child mortality** **Improve maternal health** **Combat HIV/AIDS, malaria and other diseases**		

[48] We define here dimensions as units aggregating different variables; in the table these are marked in bold or highlighted in grey. Exception for the OECD How's Life Index as some of the variables described in the summary table, such as the Environmental Quality or the inequality variables, in fact account for dimensions, aggregating several variables.

(Cont.)

Multi-Country Dashboards

Commission on the Measurement of Economic Performance and Social Progress [1]	How's Life[2]	Sustainable Development Goals (SDGs)[3]	Subjective Well-Being[4]	National Income Satellite Accounts[5]	Calvert-Henderson Quality of Life Indicators[6]	Millennium Development Goals and Indicators[7]	Comprehensive Wealth[8]	Europe 2020 (Eurostat)[9]
Mortality Life expectancy at birth Standardized mortality rates Median life expectancy Morbidity Anthropometric measures						Under-five mortality rate Infant mortality rate 1 year-old children immunised against measles Maternal mortality ratio Births attended health personnel Contraceptive prevalence rate Adolescent birth rate Antenatal care coverage Need for family planning HIV prevalence (15-24 years) Condom use Knowledge of HIV/AIDS (15-24 years) Ratio of school attendance (orphans and non-orphans aged 10-14 years) Population with HIV infection with access to antiretroviral drugs Incidence and death rates associated with malaria Children under 5 sleeping under bednets Children under 5 with fever treated with anti-malarial drugs Incidence and death rates associated with tuberculosis		

(Cont.)

Multi-Country Dashboards

Commission on the Measurement of Economic Performance and Social Progress [1]	How's Life[2]	Sustainable Development Goals (SDGs)[3]	Subjective Well-Being[4]	National Income Satellite Accounts[5]	Calvert-Henderson Quality of Life Indicators[6]	Millennium Development Goals and Indicators[7]	Comprehensive Wealth[8]	Europe 2020 (Eurostat)[9]
Disease specific information General measures of self-reported health Vignettes Specific measures of self-reported health Activities of daily living and instrumental activities of daily living Combined health measures Disability adjusted life years (DALY) Disability free life expectancy (DFLE) Health adjusted life expectancy (HALE) Health Inequalities						Underweight children under-five years of age Population below dietary energy consumption Tuberculosis cases detected and cured under treatment		
Education	**Knowledge and Skills**	**SDG 4: Quality Education**			**Education**	**Achieve universal primary education**		**Education**
	Cognitive skills at age 15: PISA scores in maths, reading and science Cognitive skills of adults: PIAAC mean scores in literacy and numeracy Knowledge and skills inequalities: gaps between population groups					Net enrolment ratio in primary education Proportion of pupils starting grade 1 who reach last grade of primary Literacy rate of 15-24 year-olds, women and men		Early leavers from education and training Tertiary educational attainment

(Cont.)

Multi-Country Dashboards

Commission on the Measurement of Economic Performance and Social Progress [(1)]	How's Life[(2)]	Sustainable Development Goals (SDGs)[(3)]	Subjective Well-Being[(4)]	National Income Satellite Accounts[(5)]	Calvert-Henderson Quality of Life Indicators[(6)]	Millennium Development Goals and Indicators[(7)]	Comprehensive Wealth[(8)]	Europe 2020 (Eurostat)[(9)]
Personal Activities	**Work-Life Balance**	**SGG 8: Decent Work and Economic Growth**		**Labour Accounts and SAM**				
Time spent on different activities[49] Paid work (decent work) Unpaid Domestic Work Commuting Leisure time Housing	Time off Long unpaid working hours Gender gap in total hours worked Satisfaction with time use Work-life balance inequalities: gaps between population groups							
Political Voice and Governance	**Civic Engagement**	**SDG 16: Peace, Justice and Strong Institutions**						
Democratic participation Participation in governance Support from outside government Constitutional guarantees Legal guarantees for basic economic needs Political and social rights guaranteed by law Ratification for international treaties Judicial institutions Equal access to and treatment for all Functioning of legal institutions Arrests and detention of political prisoners	Voter turnout Having a say in what the government does Civic engagement inequalities: gaps between population groups							

[49] walking, making love, exercise, playing reading (non-work), eating, praying, watching tv, relaxing, preparing food, talking (non-work). Grooming, other, housework, sleeping, other travel, shopping, computer (non-work), childcare, community, working

(Cont.)

Multi-Country Dashboards

Commission on the Measurement of Economic Performance and Social Progress [1]	How's Life[2]	Sustainable Development Goals (SDGs)[3]	Subjective Well-Being[4]	National Income Satellite Accounts[5]	Calvert-Henderson Quality of Life Indicators[6]	Millennium Development Goals and Indicators[7]	Comprehensive Wealth[8]	Europe 2020 (Eurostat)[9]
Social Connections	**Social Connections**			**Social Protection Accounts**	**Recreation**			
Social trust Social isolation Informal support Workplace engagement Religious engagement Bridging social capital	Social support Time spent in social interactions Satisfaction with personal relationships Social connections inequalities: gaps between population groups							
Insecurity	**Safety**				**Public Safety National Security**			
Personal insecurity Economic insecurity Job instability Job insecurity Illness Old age	Homicides Feeling safety when walking alone at night Road deaths Safety inequalities: gaps between population groups							
Environmental Conditions	**Environmental Quality**	**SDG 13: Climate Action**		**Environmental Accounts**	**Environment**	**Ensure environmental sustainability**		**Climate Change and Energy**
OECD Key Environmental Indicators Air and Climate	Exposure to outdoor air pollution Access to recreational green spaces in urban areas					Proportion of land area covered by forest CO2 emissions, total, per capita and per $1 GDP (PPP) Proportion of species threatened with extinction Proportion of population using an improved drinking water source Proportion of population using an improved sanitation facility		Greenhouse Gas Emissions Share of renewable energy in gross final energy consumption

(Cont.)

Multi-Country Dashboards

Commission on the Measurement of Economic Performance and Social Progress [1]	How's Life[2]	Sustainable Development Goals (SDGs)[3]	Subjective Well-Being[4]	National Income Satellite Accounts[5]	Calvert-Henderson Quality of Life Indicators[6]	Millennium Development Goals and Indicators[7]	Comprehensive Wealth[8]	Europe 2020 (Eurostat)[9]
Biodiversity Environmental policy Forest Resources Materials	Environmental inequalities: gaps between population groups					Proportion of urban population living in slums Consumption of ozone-depleting substances Proportion of fish stocks within safe biological limits Proportion of total water resources used Proportion of terrestrial and marine areas protected		Primary energy consumptions Final energy consumptions
Waste Water								
	Subjective Wellbeing		**Subjective Well-Being Questionnaires**					
	Life satisfaction Negative affect balance Subjective well-being inequalities: gaps between population groups							
	Housing	**SDG 6: Clean Water and Sanitation**		**Household Production Accounts**	**Shelter**			
	Overcrowding rate Housing affordability Housing cost overburden Poor households without access to basic sanitary facilities Households with high-speed internet access Housing inequalities: gaps between population groups							

(Cont.)

Multi-Country Dashboards

Commission on the Measurement of Economic Performance and Social Progress [(1)]	How's Life[(2)]	Sustainable Development Goals (SDGs)[(3)]	Subjective Well-Being[(4)]	National Income Satellite Accounts[(5)]	Calvert-Henderson Quality of Life Indicators[(6)]	Millennium Development Goals and Indicators[(7)]	Comprehensive Wealth[(8)]	Europe 2020 (Eurostat)[(9)]
	Work and Job Quality	**SDG 5: Gender Equality**		**Productivity and Growth Accounts**	**Employment**	**Promote gender equality and empower women**		**Employment**
	Youth not in employment, education or training Long-term unemployment rate Labour market insecurity Earnings Job strain Long hours in paid work Inequalities in work and job quality: gaps between population groups					Ratios of girls to boys in primary, secondary and tertiary education Share of women in wage employment in the non-agricultural sector Proportion of seats held by women in national parliament		Employment Rate (ages 20-64)
	Economic Capital	**SDG 9: Industry, Innovation and Infrastructure** **SDG 12: Responsible Consumption and Production**		**Research and Development Accounts**			**Produced Capital** **Financial capital**	**R&D**
	Produced fixed assets Intellectual property assets Gross fixed capital formation Investment in R&D Financial net worth of the total economy Financial net worth of general government Household debt Leverage of the banking sector						Fixed Capital index Inventory Index International Investment Position Index	Gross domestic Expenditure in R&D

(Cont.)

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	Natural Capital	**SDG 14: Life Below Water** **SDG 15: Life on Land**					**Natural capital**	
	Biological resources and biodiversity Climate change Soil quality and freshwater resources Waste and materials						Market Natural Capital Index Forests Wetlands Surface Freshwater Grasslands Precipitation	
							Temperature Snow Cover Glacier Mass Water Yield Sea Ice Extent	
	Human Capital						**Human Capital**	
	Education attainment among young adults Labour underutilization rate Premature mortality Smoking prevalence Obesity prevalence						Human Capital Index Education Spending Index Educational Attainment Adult Skills	
	Social Capital						**Social Capital**	
	Volunteering through organizations Trust in others Trust in institutions: police Trust in institutions: national government Government stakeholder engagement Gender parity in politics Corruption						Participation in Group Activities Volunteering Diversity in Social Networks Control Over Public Decisions Voter Turnout Generalized Trust Trust in Neighbours and Strangers Trust that a Lost Wallet Will Be Returned Trust in Institutions	

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		SDG 7: Affordable and Clean Energy		**Agricultural Accounts**	**Energy**			**Poverty and Social Exclusion** People at risk of poverty or social exclusion People living in households with very low work intensity People at risk of poverty after social transfers Severely materially deprived people
		SDG 10: Reduced Inequalities		**Tourism Satellite Accounts**	**Human Rights**			
					Infrastructure			
		SDG 11: Sustainable Cities and Communities						
		SGG 17: Partnerships for the Goals				**Develop a global partnership for development** Official development assistance (ODA) Market access Debt sustainability Proportion of population with access to affordable essential drugs on a sustainable basis Fixed-telephone subscriptions per 100 inhabitants Mobile-cellular subscriptions per 100 inhabitants Internet users per 100 inhabitants		

Sources:

(1) - (J. E. Stiglitz et al., 2009)

(2) -(Helliwell, 2003; OECD, n.d.-a, 2020)

(3) - (United Nations - Economic and Social Council, 2022; United Nations, 2015, 2022)

(4) – Not Applicable

(5) - (Eurostat, 2010a)

(6) - (Flynn et al., 2000; Henderson, 2000)

(7) - (General Assembly Resolution 55/2, 2000; MDG Monitor, n.d.; Millennium Development Goals Indicators - Official List of MDG Indicators, 2008; Millennium Development Goals Indicators - The Official United Nations Site for the MDG Indicators, n.d.)

(8) - (Ivey Foundation; & International institute for Sustainable Development, 2018; Ivey Foundation; International Institute for Sustainable & Development, 2018)

(9) - (Athanasoglou & Dijkstra, 2020; Eurostat, 2019b, 2019a; Pasimeni, 2011)